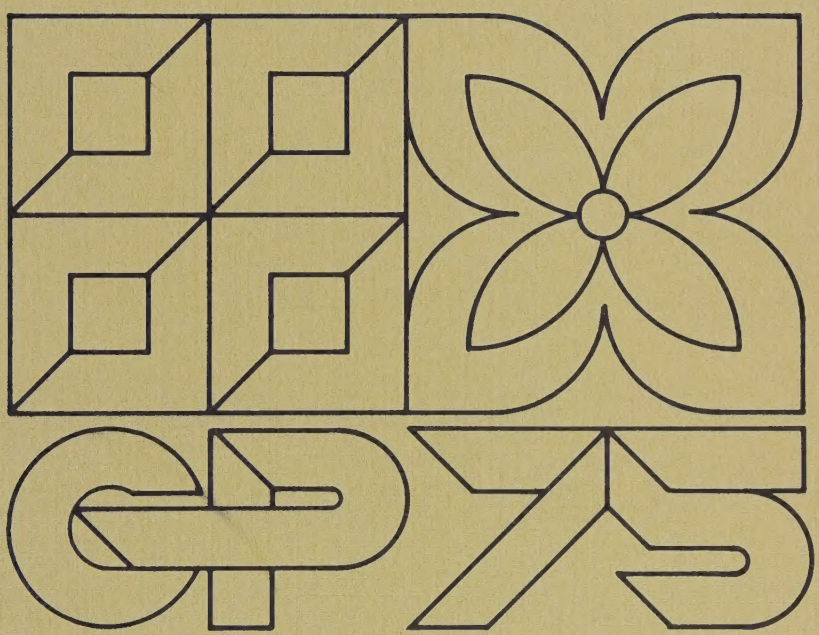

# GP'75 First Interim Report: Background For Planning · May 1975

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[insert I]

## Background for Planning Clarifications and Errata

Page 16 — In the second paragraph, "Federal Air Urban (FAU) funds" should read "Federal Aid Urban (FAU) funds."

Pages 45, 54, 58, 80 — The planning area boundaries shown on these maps are legal boundaries as exist in the adopted General Plan. In addition, city ordinance has established that the collection and expenditure of construction/conveyance tax monies be in relation to these areas. Changes were made in the GP '75 program for the purpose of greater community representation at the Coordinating Committee and for presentation of information at convenient locations. The official boundaries will remain as shown until such time as changed by General Plan amendment.

Page 80 — Certain symbols for existing fire stations were mislocated or eliminated in the process of information transferral and printing.

- Station 10 should be added on South Monroe Street in West Valley.
- Eliminate the symbol south of the junction of Hwy 17 and Bayshore Freeway.
- The two symbols north of San Carlos St. in the area of Lincoln Ave. are actually the administration building and training center, not fire stations.
- The following symbols should be relocated:

  in West Valley, Station 14 northwest to Payne

  in Edenvale, Station 13 northwest to Branham Lane

  in North San Jose, Station 20 east to the Guadalupe River

  in Central, Station 6 southeast to Cherry and Minnesota Ave.

  Station 8 northeast to 17th and Santa Clara

  Station 4 slightly west on Auzerais

Page 102 — California Department of Finance D-100 projection for 1990 should be 1,614,000.

Page 102 — San Felipe Project EIR projection for 1990 should be accompanied by footnote number "4".

Page 104 — All projections for year 2000 are incorrect as typed and should read:

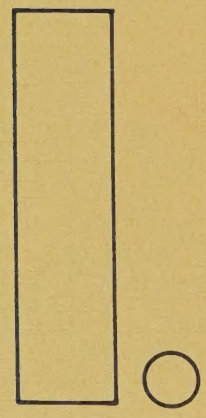
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2000 | 1,274,649 | 1,204,890 | 1,135,136 | 1,118,821 | 1,054,645 | 990,468 | 962,990 | 904,396 | 845,804 |

Pages 104 and 106 — Bottom two footnotes are reversed and should read:

( ) Top parentheses contain percentage of population increase for the planning period 1975 to 1990.

( ) Bottom parentheses contain the percentage of population from 1970 to 1990 for comparison with County projections.

TABLE OF CONTENTS



# Introduction

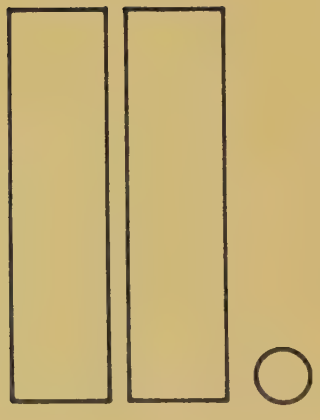
# I. INTRODUCTION

## A. SCOPE AND PURPOSE OF THE REPORT

Since the initiation of the General Plan Revision program, City staff has reviewed and analyzed a broad array of information felt to have a bearing on future development of the City. The material included in this report corresponds with the work outlined in the Survey and Analysis phase of the work program. This report is intended to communicate the results of this work. The information contained herein is by no means all the background information needed in the General Plan revision program. As the work progresses, additional reports will be prepared. A great amount of relevant data and information already exists, much of it contained in the several General Plan elements.

This report is intended to serve a variety of functions: to provide basic information needed by the participants in the General Plan program; to facilitate the identification of major planning issues; and to summarize the major (sometimes tentative) conclusions arrived at by City staff as to the factors which may influence future actions of the City. It is not a plan, nor a statement of recommended policy. It is but a first step in developing a new General Plan. The information and conclusions presented in this report will be utilized in the next, and subsequent, phases of the program.

Many of the topics covered in this report are the subject of existing City policy. The reader who is interested in what the present policy is in regard to any of these topics is referred to the recent report by the Planning Department entitled, "Composite of City Goals and Policies".



# Summary of Conclusions

## II. SUMMARY OF CONCLUSIONS

### A. QUANTITATIVE ASSUMPTIONS FOR FUTURE GROWTH

#### 1. Population

- City and County population growth will be increasingly less dependent on in-migration, with natural increase and in-migration being generally equal components of growth by 1990.

- Birth rates will continue to decline over the next 15 years, as will the rate of population increase.

- If migration and fertility rate trends continue, Santa Clara County population could increase from its 1975 level of 1,191,000 to over 1,590,000 in 1990.

- San Jose's population will constitute an increasingly large percentage of total County population, increasing from approximately 45% in 1975 to approximately 49% in 1990.

- If migration and fertility rate trends continue, the City's population could increase from an estimated 542,200 in 1975 to approximately 783,376 in 1990, while the population within the City's sphere of influence expands from 643,235 to approximately 878,373 in 1990.

  --Such a population level for the sphere of influence could not be accommodated at present average densities of development and in consonance with City policy related to environmental safety.

#### 2. Income

- The national economy will experience continued growth without major or long-term recessions.

- Santa Clara County incomes, which are the third highest among metropolitan areas in the nation, will maintain high rates of growth over the next 15 years.

- Any significant advances in the County's overall prosperity must be accompanied by fuller utilization of minority and underemployed labor resources.

3. Employment

- The economy of Santa Clara County and of the City will remain strong and continue to expand, though not as rapidly as in the previous decade.

- Industry within the County will become increasingly less dependent upon government contracts, and those industries which are largely dependent upon government contracts will not experience severe cutbacks.

- Employment in the manufacturing of durable goods, in services, and in trade is expected to experience the strongest growth.

- San Jose will increase its share of Countywide employment growth and could reasonably expect to capture 50% of new industrial jobs in the County.

- Unless employment growth in San Jose largely relies upon existing labor force, additional in-migration might be induced, and projected levels of population exceeded.

B. GENERAL ASSUMPTIONS AND CONCLUSIONS

- Federal, State, regional and county governments will increasingly promote mass and rapid transit systems, and disincentives to the use of the automobile.

- Less revenue will be available to State and local governments for street and highway projects as a result of changed priorities at State and Federal level, as well as reduced revenues from gasoline taxes.

  --Some proposed freeway projects within the City will not be funded within the next 15 years, or may be eliminated or converted to transit corridors.

  --State participation in the construction of new overcrossings of existing freeways is unlikely within the General Plan time frame.

- A rapid transit extension to the BART station in Fremont will be in the planning or construction stage, but will not be operational by 1990.

  --We should anticipate this, and plan for the route location.

- Improved rail transit between San Francisco and San Jose can be expected within the time frame, most likely due to upgrading of existing rail service.

- The County transit system will be greatly expanded and will provide a more convenient and practical alternative to the automobile.

  --Transit development and patronage will benefit directly from higher levels of funding and indirectly from air quality regulations, increased traffic congestion, and increased cost/decreased availability of gasoline.

- Some form of intracounty fixed guideway system is technologically feasible by 1990, but may or may not be chosen as the best alternative to meeting the County's transportation needs.

- San Jose Municipal Airport will remain at its present location.

- Air quality standards under the Clean Air Act will not be relaxed although their implementation may be delayed; regulations to achieve air quality standards will be in force within the planning time frame and will subject some local development to review by State or Federal government.

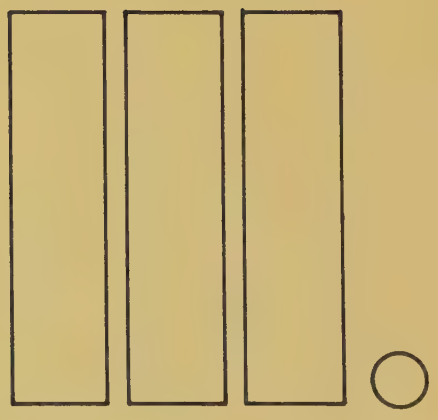
- Energy supply and demand impacts will become more explicit considerations in land use decision making.

- Energy availability in conjunction with other disincentives to automobile usage and increasing cost of new housing, will increase the demand for existing, more centrally located housing.

- An increased desire for conveniently located commercial facilities may result in a more common occurrence of small convenience centers within neighborhoods, as well as integrated residential and neighborhood-serving commercial developments.

- Water supply could impose a constraint on development within the next 15 years.

- The availability and adequacy of public facilities and services (including transportation) will increase in importance as a determinant of the timing and location of development.



Regional Survey

# III. REGIONAL SURVEY

## A. REGIONAL LAND USE PLANS

### 1. Regional Plan for the San Francisco Bay Area

The Association of Bay Area Governments (ABAG) is a voluntary association, for planning purposes, of the cities and counties of the Bay Area. Its basic function is to provide the framework for dealing with regional problems on a cooperative, coordinated basis. In 1970, ABAG adopted a Regional Plan for the Bay Area for the years 1970 to 1990. Since ABAG is not itself a government agency and has no direct control over land use decisions by local government, San Jose is not bound by the provisions of the Regional Plan. It is worth reviewing the Regional Plan, however, to gain a perspective of San Jose's role within the region, as viewed by ABAG. The Plan is now several years old and has been refined in some aspects. The basic concepts remain generally as described below.

#### Background

As an initial step in developing a regional plan, ABAG first prepared a preliminary plan which identified three alternative regional development concepts. These concepts were:

1. Urban Corridor concept. The existing pattern of development within the region already approximates this concept due largely to topographic considerations. Strong linear development would occur primarily along transit lines, with a consequent "blending" of communities.
2. City Centered concept. Urban growth would be directed to separated and distinct, dense urban centers. The separation would be provided by intervening open space and the centers would be linked to one another by transit.
3. Suburban Dispersion concept. This would reflect in the future, the form that would result from a continuation of current development practices. This would give the whole area an appearance of almost total urbanization.

The adopted Regional Plan contains some of the characteristics of all three concepts but the primary emphasis is on the City-Centered concept, with secondary emphasis on the Urban Corridor concept. The plan proposes that future growth take place within distinct communities and that it occur either as redevelopment, infilling, or vertical expansion of existing communities, or as controlled expansion at the edges of existing communities. The plan does not make recommendations regarding the density or location of residential uses within communities, but does recommend that housing should be close to places of work.

Two categories of open space are suggested in the plan. "Permanent open space" would serve a variety of functions including separation between communities and preservation of natural resources. Of particular relevance to San Jose is the plan's recommendation that prime soil lands and specialty crop lands (e.g., vineyards and orchards) be permanently preserved. It also recommends that salt ponds be retained. The second category of open space is that of "controlled development areas". These areas are basically holding zones in which no urbanization is anticipated prior to 1990. It is suggested that the desirability of growth beyond 1990 be further studied.

The transportation proposals of the plan reflect an assumption that the use of automobiles should be reduced and other transportation modes emphasized. It is also suggested that the need for long commuting trips would be minimized if places of employment and residence were located in closer proximity to each other. Regional transportation connections are shown as linking all communities around the Bay.

The graphic proposals of the Plan depict the Alviso area as permanent open space and Coyote as a controlled development area. Two proposed extensions of rapid transit affect San Jose: (a) a southern continuation down the peninsula along the Southern Pacific right-of-way directly to downtown San Jose, and indirectly there via a route to the western part of the County; (b) an extension of BART from Fremont to downtown San Jose generally following the path of Highway 17.

Conclusions

Consistency with the Regional Plan for the Bay Area would require San Jose to:

1. Preserve Alviso largely as permanent open space
2. Defer urbanization in Coyote until at least 1990
3. Preserve prime soil and specialty crop areas

2. San Francisco Bay Plan

Background

The protection and development of San Francisco Bay is the responsibility of the San Francisco Bay Conservation and Development Commission (BCDC). The BCDC consists of 27 members who represent Federal, State and local governments and the general public. Public representatives are appointed by the Governor; Federal and State representatives are chosen from designated agencies such as the Corps of Engineers and the State Resources Agency, and the local representatives are appointed by the individual county's Board of Supervisors. BCDC presently operates under a 1969 amendment to the McAteer-Petris Act, which sets out three major areas of responsibility:

1. To regulate all filling and dredging in San Francisco Bay.
2. To minimize pressure to fill the Bay by insuring, to the maximum extent feasible, public access and by insuring that the amount of existing shoreline property suitable for high priority purposes is reserved for these purposes.

3. To exercise limited authority over salt ponds and other diked areas not subject to tidal action so as to protect them for wildlife habitats and important water surface areas.

In carrying out its responsibilities, BCDC is guided by the San Francisco Bay Plan, which was prepared by the Commission and approved by the Governor and legislature in 1969. The basic goal of the Bay Plan is "to guarantee to future generations their rightful heritage from the present generation: San Francisco Bay, maintained and enhanced as a magnificent body of water that helps sustain the economy of the western United States, provides great opportunities for recreation, moderates the climate, combats air pollution, nourishes fish and wildfowl, affords scenic enjoyment, and in countless other ways helps to enrich man's life." The policies contained in the Bay Plan generally emphasize the point of view that the Bay should be treated as an extremely valuable natural resource, not as a piece of real estate.

Analysis

The San Francisco Bay Plan is basically divided into two sections. One section deals with the Bay as a natural resource and presents findings and policies generally emphasizing the maintenance and enhancement of the Bay as a dominant element of the regional ecosystem. Findings and policies related to the findings are presented concerning fish and wildlife protection, the prevention and improvement of water pollution, the effects of the Bay on the weather, the necessity of maintaining water surface area and volume, the desirability of marshes and mudflats, the need for continued fresh water inflow and the effects of dredging.

The second part of the Plan recognizes the Bay as a valuable economic resource, and presents findings and policies generally emphasizing the need for good land use planning in Bayland areas to insure continued economic viability, both for industrial development and recreational development.

The heart of the Plan is a series of maps that indicate in fairly broad terms the suitability of various locations for preservation in their natural condition, development as recreational areas or development for industrial or other intensive uses.

The primary impact on San Jose of the San Francisco Bay Plan and BCDC regulations is in the Alviso area. Based on the policies contained in the Bay Plan, planning proposals for Alviso should emphasize:

1. the recreational potential of this area;
2. improvement of water quality discharged into the Bay - river and waste;
3. provisions for new shoreline parks, beaches, marinas, fishing piers, scenic drives, and hiking or bicycling pathways;
4. that the benefits of fish and wildlife in the Bay be insured for future generations; thus, adequate fresh water inflow into the Bay should be maintained;

5. to the greatest extent feasible, the remaining water volume and surface area of the Bay be maintained;

6. the prevention of sedimentation resulting from dredging projects -- mud from future dredging should be disposed in areas which will be least harmful to the ecology of the Bay;

7. compatible public and commercial recreational facilities be clustered to the extent feasible to permit joint use of any ancillary facilities.

8. carefully planned sites for marinas and launching lanes; sites that tend to fill up unusually rapidly with silt or mud, or that are subject to unusual amounts of dense fog, should be avoided; fill permitted for marine development should be the minimum necessary to provide support facilities such as, parking and service buildings;

9. that fishing piers not block navigation channels, nor interfere with normal tidal flow;

10. efforts to minimize the potential hazard to Bayside development from subsidence due to underground withdrawal; all proposed development at the lower end of the South Bay should be sufficiently high above mean sea level or sufficiently protected by dikes.

The San Francisco Bay Plan suggests that San Jose prepare a precise plan and development program for the Alviso waterfront area, including expanded boating and commercial recreation facilities and provisions for continuous public access to Alviso Slough frontage. The Plan also suggests that deep salt ponds located near Alviso Slough be developed as a controlled-level recreation lake. The shallow ponds near Coyote Creek have a high wildlife value and should be excluded from intensive use areas. The Plan proposes that the east side of the Alviso Slough be developed as a park from the existing marina to the mouth. Also proposed are improvements to Alviso Slough, including the widening and strengthening of the levees to make them suitable for recreational uses. Access is to be provided to Newby Island for wildlife observation with a possible park to be developed at the mouth of Mud Slough.

Conclusions

The Bay Plan and BCDC represent limitations on the options the City has with respect to Alviso. Whether these limitations would ever constitute a real constraint would depend upon the City's plans for Alviso. If the City wished to develop a port facility or an airport in Alviso for example, there would be a conflict. The City has no such plans, however. Most of the area around Alviso is in marshland or salt ponds and is extremely valuable for wildlife and fish. It is also an area that is extremely vulnerable to damage from human activity, and it is unlikely that BCDC would approve any type of intensive development.

## B. REGIONAL TRANSPORTATION PLANS

The Metropolitan Transportation Commission (MTC) was created by the California State Legislature in 1970 to bring a coordinated approach to transportation planning in the 9-county San Francisco Bay Area. The Legislature directed MTC to prepare and annually update a Regional Transportation Plan and gave it authority to guide the future development of transportation facilities in the Bay Area. The Commission consists of 16 members -- 2 from Santa Clara County.

MTC is empowered to review and make recommendations on all applications for State and Federal transportation funds sought by local governments and public agencies in the Bay Area. MTC also has veto power over State highway projects not in conformance with the Regional Transportation Plan; and funding control to influence the direction of public transit planning in the Region.

This section summarizes the current Regional Transportation Plan and two special studies, the Transit Development Plan and the Peninsula Rail Upgrading Study, which are reflected in RTP.

The Plan proposes a $12 billion program of regional transportation projects during the period 1975-1985. The commitment, for planning purposes, is to a "coordinated regional transportation system composed of mass public transit, highways, airports, seaports, and railroads." To this end, major urban areas of the Bay Region are to be connected with major highway and trunk line transit services. The reduction of automobile dependency is an assumed bias in the construction of new transportation facilities.

The Plan designates twelve regional land use/transportation corridors. Three of these, the East Bay Corridor, Santa Clara Valley Corridor, and West Bay Corridor, pass through and converge in San Jose.

A land use/transportation corridor is defined as:

> A passageway of land use and transportation activities, having a specific location and character, and constituting a link in a network of other such corridors.

Four freeway projects are proposed in the San Jose area for the 1975-1985 period:

- Bayshore (101) and Nimitz (17) freeway widenings from their intersection in San Jose northward.
- South Valley (101) Freeway construction from Ford Road to Morgan Hill

- Guadalupe Freeway construction (beginning with Bayshore Freeway-Route 280 link)

- Routes 101, 280, 680 interchange completion.

In addition, unspecified traffic management programs (e.g., freeway on-ramp metering) are proposed. None of these projects represent a departure from long-standing policy or commitments of local and State agencies. They would serve primarily to relieve existing traffic problems. South Valley Freeway, for example, would respond to serious safety problems on the existing Route 101. Growth-inducing impacts are serious, but could, to a large extent, be a function of alignment and interchange location. Guadalupe Freeway would promote the City's existing Core Area policies and reinforce a sub-regional corridor already staked out by Almaden Expressway. The total cost of the above projects is projected to be $173 million.

Proposed transit improvements involve: (1) The basic program of maintaining and shoring-up existing transit services, and (2) The more ambitious program of greatly expanded bus fleets, upgrading rail services and/or providing new fixed rail transit facilities. MTC's basic transit proposals for Santa Clara County include:

- Maintenance of the existing County bus system with at least the present 212 unit fleet

- A possible "transit-preferential" street system

- "Trunk-line" transit service between downtown San Jose and the Airport

- "Trunk-line" transit services between San Jose and San Francisco, and San Jose to the BART terminal at Fremont.

Although the Regional Transportation Plan is not explicit, the "trunk line" proposals presumably involve additional buses, until such time as rail facilities are developed.

The additional transit proposals for the County include:

- An expanded county-wide bus fleet (beyond the present 212 buses), and

- Other transit improvements possibly including:

  - Extension of BART from Fremont to San Jose

  - Extension of BART from Daly City to San Jose or upgrading of the Southern Pacific service from San Francisco to San Jose

The proposal to upgrade Southern Pacific service in the "West Bay corridor" has been the subject of special study as already indicated. Three alternatives have been proposed to provide this upgraded service including (1)

selective and limited improvements to the existing system including feeder bus service; (2) increasing capacity of the existing system to include new rolling stock, expanded station facilities, and centralized traffic control; also, relocation of the San Francisco terminal to either Daly City to interface with BART, or downtown San Francisco at the site of the proposed new Transbay Terminal, and (3) conversion to full rail rapid transit including elevated or grade-separated trackage.

The second alternative is judged to be the most feasible, and would involve a joint exercise-of-powers arrangement between the Santa Clara and San Mateo County transit districts, City and County of San Francisco, and Southern Pacific.

A major weakness of the SP upgrade study is the relative inattention to the San Jose terminal. The possibility of relocating the San Jose station to a more convenient downtown location was not discussed. This suggests the larger issue of connecting San Jose with both San Francisco and Oakland with trunk line transit services. If the SP upgrade proposals are implemented to any significant extent then attention must be given to appropriate interfacing in downtown San Jose between the SP line and a possible BART extension from Fremont.

The possibility of a South Bay regional transit "loop" connecting the East Bay and West Bay corridors does not, of course, address transit needs within San Jose itself or Santa Clara County. This problem is dealt with in the following section.

Conclusions

1. Completion of key freeway projects, which greatly enhance San Jose's regional accessibility, is anticipated within the next 10 years.

2. Increased levels of transit service to other parts of the Bay Area, including Oakland and San Francisco, will likely be available within the next 10 years.

3. BART extensions or other regional rail transit links will be in the planning stages or under construction within the next 10 years.

4. Further attention must be given by MTC and the County to the nature of the regional transit links with San Jose and the East Bay and West Bay corridors.

## C. COUNTY TRANSPORTATION PLANS

Transportation planning and operations at the County level are carried out by the County Transportation Agency and the Santa Clara County Transit District --

legally separate entities, but consisting of the same management and staff. Decision making is carried out by the County Board of Supervisors who also sit as the governing board of the Transit District. This board is assisted by an advisory Transportation Commission consisting of County and City representatives.

The County's transportation system consists of the present bus operation including 116 buses on 19 arterial routes, and 64 buses in the demand responsive ("dial-a-ride") mode; also 66 miles of County expressways, along with County roads and County airports.

The thrust of the County's transportation planned effort is currently in the direction of promoting mass public transit. The present countywide bus system is undergoing evaluation and hopefully will be adjusted in response to new realities. The future of public transit, as well as highways, in the County was the subject of the recently completed Rapid Transit Development Project, Phase I (RTDP-I) as well as the County staff paper, Transportation Improvement Program (TIP). Neither report constitutes a final plan and both are the subject of continuing comment and debate. Many of the issues raised in this process will be dealt with in a third report, Rapid Transit Development Project, Phase II yet to be commenced.

RTDP Phase I responds to the adopted County goal of achieving a 30% transit ridership. The present 3.8 million person-trips produced countywide is expected to increase to 6 million person trips by 1990. A 30% transit ridership would capture 1.8 million of these trips by 1990 leaving 4.2 million automobile-oriented person trips.

Because of San Jose's and Santa Clara County's dispersed and decentralized development pattern, RTDP-I hypothesizes that an optimum public transit system in the County would have to consist of (1) a high performance, grade separated, "fixed guideway" (rail) transit network for longer trips, and (2) a "collection-distribution" (e.g., bus) system for shorter trips. For the fixed guideway network, a "medium capacity rapid transit" (MCRT) system consisting of a 140-mile network countywide (See Figure 1) is proposed. Such a system would be considerably less expensive and more flexible than a BART-type system (see section on Transportation Technology). However, fixed guideways of any kind would be wholly inadequate without the companion collection-distribution system to get people to and from the transit stations and to provide for short trip needs.

The alternative to the transit system recommended above, or some other transit system capable of capturing a significant ridership, would be the need for a greatly expanded highway network according to RTDP-I (see Figures 2 & 3). For example, Bayshore Freeway is planned to be an eight lane facility by 1990 and would require 3-4 additional lanes through most of San Jose making a theoretical total of 16 lanes.

The possibility of an all-bus transit system and exclusive bus lanes is dismissed by RTDP-I as a long term transit alternative. However, the need for such a system would seem to be a necessity as a means of building up to the recommended transit system, and of providing for the more immediate transit

FIGURE 1

MEDIUM CAPACITY RAPID TRANSIT (MCRT)
140-MILE SYSTEM

SOURCE:
De Leuw, Cather, & Co.

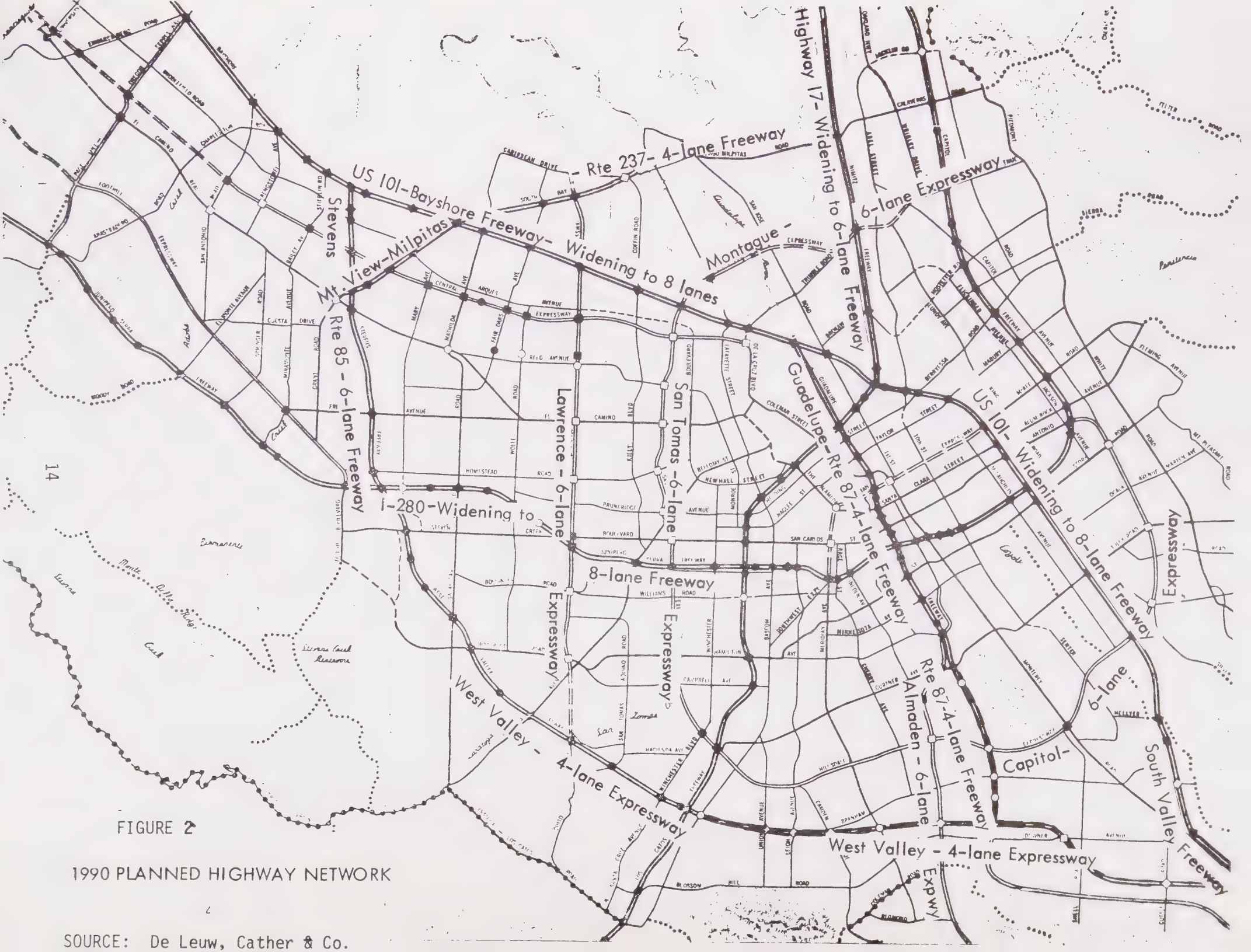



FIGURE 2

1990 PLANNED HIGHWAY NETWORK

SOURCE: De Leuw, Cather & Co.

FIGURE 3

1990 VOLUME/CAPACITY RATIOS
BASELINE HIGHWAY NETWORK

| V/C Ratio | Number of additional lanes required each direction |
|---|---|
| 1.75-2.00+ | 3-4 |
| 1.50-1.75 | 2-3 |
| 1.25-1.50 | 1-2 |
| 1.00-1.25 | 0-1 |

SOURCE: De Leuw, Cather & Co.

requirements of the County. In this way, fixed guideway network, such as the 140 mile system recommended by RTDP-I, would when completed, serve to reinforce an already existing and viable transit system.

Transportation Improvement Program

The County's Transportation Improvement Program - 1975-1980 (TIP) makes the following transit proposals:

- Expansion of the County bus fleet from the present 212 to over 500 units
- Preliminary design work on the "fixed guideway" network proposed in RTDP-I.
- Various railraod upgrading projects including:
  - SP line, San Jose to San Francisco
  - SP or BART line, San Jose to Fremont
  - Private line roughly parallelling proposed West Valley Freeway
  - SP line to Coyote and South County

The road portion of the proposed TIP involves a significant shift of available funds to the "fixed guideway" program. Included in this shift are County gas tax funds and Federal Air Urban (FAU) funds from 1975-76 to 1979-80. In this manner, additional State and Federal matching funds could be generated for fixed guideway purposes. However, this approach would require the deprogramming of various State and County highway programs.

Conclusions

As already indicated, RTDP-I and TIP are discussion papers which, by their very nature, raise important questions, the resolution of which will determine countywide transportation priorities over the next five years and beyond. Among these issues are at least the following:

1. What type of in-county transit system is best for San Jose and the County? An all-bus system involving exclusion bus lanes and express bus services, or a fixed guideway system with an accompanying collection-distribution system.
2. If a fixed guideway system is deemed desirable, what should be the timing of its implementation? How are County transit needs to be met in the interim?
3. How important is it to complete highway programs already planned, and designed to relieve existing congestion, and to possibly provide corridors for existing and future mass transit?
4. What impact will the transit system have on land use, either positive or negative?

# Other External Considerations

# IV. OTHER EXTERNAL CONSIDERATIONS

## A. TRANSPORTATION TECHNOLOGY SURVEY

### Background

Transportation plans at the regional and County level accept as a basic premise that reliance on the automobile must be significantly reduced by a strengthening of the mobility role of other modes of transportation. At present, buses and BART provide supplementary transportation service and the Santa Clara County Transit District is considering the development of a "light guideway transit system." There are numerous forms of new or improved transportation technologies which are available for consideration as part of a San Jose and Santa Clara County transportation system. A review of these can help one form a judgment as to what modes of transportation might be operationally feasible within the next 15 years, and more importantly, which one, or combination, might best meet the transportation needs of the County and San Jose.

Buses. Buses are obviously not a new transportation technology, as they have been a fixture of American transportation for over 50 years. Technological improvements are being made, however, in both vehicle design and overall system operation, which offer many advantages over more conventional systems. Vehicle design improvement is being promoted by the Federal Urban Mass Transportation Administration which is funding the development of a prototype bus which will incorporate such features as safety bumpers, roomier seats, improved passenger protection, reduced smoke and odor emissions, and reduced noise levels. Improved vehicle design may improve the public image of buses and make it a more attractive mode of transportation. Improved bus systems have been instituted in various cities in the U.S. These systems improvements include preferential highway lanes, exclusive bus lanes and ramps, and bus-controlled traffic lights. An additional innovation is the "demand-responsive" system which is characterized by the "dial-a-ride" system of the Santa Clara County Transit District. The advantages of buses as a form of transit are their relatively low cost and flexibility. Their disadvantage is their low-carrying capacity as compared to other forms of transit.

Light Rail Transit. Light rail transit systems are the direct descendant of nineteenth century horse drawn street car lines. Contemporary examples are the street cars and cable cars of San Francisco, and the street car lines of Boston and Philadelphia. While few cities in the U.S. still operate LRT systems, some of those which do are purchasing greatly improved equipment. Advances in LRT technology include vehicles which are larger, capable of attaining higher speeds, able to accommodate larger numbers of passengers, and which are "articulated" in the middle to permit operation over sharp curves. Compared to other forms of mass transit, light rail transit generally requires a significantly lower initial investment with only slightly less capacity. It also requires much less sophisticated system control mechanisms than some other new transportation technologies.

Heavy Rail Transit. To many people, rapid transit means heavy rail transit. Examples of heavy rail transit are BART, the subways of New York and London, and monorails. New HRT systems are being built or planned for several large cities. The newer systems built in recent years have experienced numerous problems related to their complex control systems and relatively untested equipment. HRT systems are designed to accommodate large numbers of people and are capable of attaining high speeds. They are best suited to serving heavy travel demand corridors and are capable of handling up to 60,000 persons per hour in one direction. This requires relatively few stops and short headways between trains. The primary disadvantage of HRT is the extremely high costs of construction combined with the relative inflexibility of the system.

Personal Rapid Transit. Personal rapid transit is still in the very early stages of design. The technology of PRT systems is aimed at providing on-demand personal service to compete with the mobility provided by the automobile in typical low density urban areas. Its goal is to move individuals rather than groups of people. Two systems which are in advanced developmental stages were demonstrated at TRANSPO '72, but no fully operational systems have been built yet. The major problems facing PRT include methods of achieving the required short vehicle headways and methods of managing and allocating the vehicle fleet to ensure acceptable response times. It is unlikely that PRT technology is sufficiently developed to serve as a viable means of mass transit in the near future.

Light Guideway Transit. Light guideway transit, which is also referred to as Medium Capacity Rapid Transit, represents the middle ground of transit technology. It concentrates on moving small groups of people in 10-40 passenger vehicles and is a more practical extension of the personal rapid transit goal of moving individuals. Capacity of LGT systems ranges from 5,000 to 30,000 passengers per hour one direction with speeds ranging from 10-60 mph. Guideways may be underground, at grade, or elevated. The vehicles may operate as single units or in small trains. The typical LGT proposal consists of vehicles and guideways that are smaller and lighter than heavy rail transit, and consequently have lower construction costs and a greater number of installation possibilities. Various LGT systems are in operation, but all on a modest scale. They tend to be fixed-loop systems with few stations, or to provide shuttle service for such facilities as airports. These systems, because of their adaptability to a variety of applications, represent the primary thrust of advanced transit technology.

Dual-Mode Transit. A dual-mode system allows operation of a vehicle either independently on a street or on an automated guideway either independently or as part of a train. The Urban Mass Transportation Administration has awarded contracts for conceptual design of dual-mode systems but a demonstration project is not expected to result prior to 1980. The system being studied would utilize vehicles similar to mini-buses operating as a conventional bus in the collection-distribution segments of a trip and on a fully automated guideway for the remaining trip portions. The most complex form of dual-mode technology involves a combination of the automobile's convenience and flexibility coupled with the efficiency and safety of fixed guideway travel for long distance trips. It is unlikely that a working design for a personalized dual-mode system will be ready prior to 1990.

Conclusions

1. There appears to be three transportation technologies sufficiently developed to be operational as a local transportation system by 1990. They are the light rail transit, the bus, and the light guideway transit systems.
2. Availability of technology will not be a limiting factor in meeting transportation needs, nor should it be the determining factor. There is no single existing transportation mode of technology which can meet the overall transportation needs of Santa Clara County and San Jose.
3. Heavy Rail Transit is more suited to meeting regional travel demand than for local, intracounty travel demand.
4. Buses provide the best combination of flexibility and low-cost of any present form of mass transit. They will continue to be relied upon for short trip purposes and in the event of development of a LGT or LRT system within the County, will be essential for collection-distribution trips.
5. There is no form of transportation likely to be operational by 1990 which can provide the personal mobility of the automobile. While other forms of transportation will reduce dependence upon the automobile, the automobile will continue to be extensively used and the planned freeway/expressway system should be completed.

## B. AIR QUALITY

### Background

The passage of the Clean Air Act in 1963 and subsequent Amendments to the Act, principally those enacted in 1970, committed the Federal Government to a program designed to achieve a national level of air quality sufficient to insure the public health and welfare from any adverse effects. The Act established three principal approaches to achieving the required air quality standards; vehicle emission controls, controls on new stationary emission sources, and required State Implementation Plans.

The aspect of the Act that is most familiar to the public is the requirement of vehicle emission controls. Since 1968 increasingly stringent pollution requirements programmed to eventually reduce automobile emissions by 90 percent, compared to 1970 levels, have been enforced. The Act also requires the Administrator of the Environmental Protection Agency (EPA) to develop emission standards for new stationary sources if it is determined that such sources contribute significantly to air pollution. To date new-source performance standards have been established for twelve categories of uses, including such things as sewage treatment plants, steam generators, and portland cement plants.

Congress, recognizing that the aggregate level of air pollution in any one area is caused by a variety of sources and that the relative contribution of these sources may vary significantly from area to area or state to state, has placed the responsibility for planning and enforcing the measures necessary for achieving air quality standards with the individual states. The E.P.A. is required to insure that each state develops a State Implementation Plan (S.I.P.) designed to attain the required air quality levels no later than 1977. While the implementation of Federal emission standards for new motor vehicles and stationary source regulations will substantially reduce pollution levels, these measures alone are not sufficient for the San Francisco Bay Area to achieve the required air quality within the time period allowed for compliance. Because the automobile is the primary source of urban pollution, if full compliance with the Clean Air Act is to be achieved, there is a need for further control of emissions from transportation sources to supplement the emission controls on new automobiles. In order to insure the attainment and maintenance of air quality standards, E.P.A. has determined that the State Implementation Plans must contain the following elements. A Transportation Control Plan, including strategies for reducing emissions from individual vehicles beyond the requirements of Federal emission controls, i.e., retrofit programs and required maintenance programs. The TCP must also contain strategies for reducing the overall emissions by reducing the total vehicle miles travelled in a region, i.e., transit incentives, parking management regulations, carpool incentives and possible gasoline rationing. Also required in the State Implementation Plans are Indirect Source Review regulations designed to reduce overall emissions by providing for State or E.P.A. review of such things as shopping center design, airport design and highway design to insure that the traffic that these facilities will attract will not lead to violations of the clean air standards. These strategies have caused a great deal of controversy as State and local governments feel that through these measures the Federal government will gain veto power over decisions which are constitutionally outside their authority. The courts, however, have generally upheld E.P.A.'s position and in several instances have forced E.P.A. to implement regulations sooner than they wished to.

Conclusions

1. The Federal government has made a committment to clean up the air, and while they seem reluctant to enforce regulations which will cause severe economic and social disruptions, eventually, compliance with the Clean Air Act will be required.
2. Although at the present time San Jose is not required by law to take any specific action with regards to air quality, it would be advantageous to anticipate E.P.A. requirements and include air quality considerations in land use planning in order to extend, over time, any disruptive effects that might result when the provisions of the Act are fully enforced.
3. Regulations contained in the Transportation Control Plans designed to discourage the use of the private automobile will substantially increase the need for, and the desirability of, improved public transportation.

4. Regulations such as parking management requirements and indirect source review, will give E.P.A. the power to deny or modify projects which now are totally under local control.

5. Large heavy industrial plants, power plants and sewage treatment plants may be prevented from locating in developed areas because of the resulting deterioration in air quality.

6. Indirect source review regulations may result in large shopping centers considering air quality factors when making locational decisions, in order to avoid potentially expensive plan modifications necessary to meet E.P.A. air quality standards.

7. Indirect source review regulations may result in facilities reducing their size in order to avoid falling under the regulations.

8. Parking management regulations may result in reduced parking requirements for various facilities, thus increasing the need for alternative forms of transportation.

9. Air quality in San Jose is directly related to the success of abatement in the basin to the north. It is therefore primarily a regional problem requiring a solution which involves the entire bay region.

## C. ENERGY SUPPLY

The American public first became acutely aware of the "energy crisis" as a result of suddenly finding it difficult to "fill up the tank." The public has subsequently felt the impact of an apparent shortage of energy in a variety of ways, not the least of which is a significant increase in the cost of utilities. There has been considerable discussion as to whether the "energy crisis" is real or merely apparent, and if real, whether a short-term or a long-term phenomenon. The Federal government is now undertaking a comprehensive analysis of energy supply and demand, and is considering how the United States might become energy independent by 1980. If the Federal government seriously pursues a policy of significantly reducing oil imports, the implications for community development are considerable. The purpose of the following discussion is to review the current status of energy supply and consumption, the prospects for additional energy production; and the implications of the energy situation to future development in San Jose.

### Background

#### Consumption.

The United States is the most voracious consumer of energy in the world. The U.S. uses one third of the world's energy, but has only 6% of the world's population. Through 1950, we were energy self-sufficient, but now domestic production cannot keep pace with consumption, which has been growing at 4.5% per year. In part, this level of consumption is a concomitant of advanced industrialization, in part a reflection of economic controls and regulations which have kept fuel and energy prices to below free market values. This in turn has encouraged excessive consumption.

The major consumer of energy in The U.S. is industry, which consumes 41.2% of the domestic energy supply, including raw materials. Transportation is the second largest consumer, with a 25.2% share of the energy supply. The continued increase in transportation-related energy use reflects increased total vehicle miles driven and reduced vehicle efficiency. Automobiles consume 2 to 4 times the amount of energy per passenger mile than urban mass transit. Residential energy use constitutes 19.2% of the energy supply, an increase of 50% through the 1960's. The increase reflects a tendency towards smaller households, a greater tendency among elderly and young adults toward maintaining their own homes, and greater affluence. Space heating and water heating are the major components of residential energy use. Commercial energy use has grown at 5.4% per year since 1960, to a 14.4% share of domestic energy supply.

Sources of Supply

1. Oil. The United States now relies on oil for 46% of its energy, natural gas for 32%, coal for 17%, hydropower for 4%, and nuclear power for 1%. The obvious reliance of the country on oil as the major source of energy contrasts with the fact that crude oil production has been declining since 1970. This has resulted in greater dependency upon foreign sources of oil. The greatest known reserves of oil are in the Middle East. Several Middle East countries together dominate the world market with 60% of world reserves and 70% of world oil exports. The 1973 oil embargo demonstrated our domestic vulnerability to insecure imports, when it precipitated $10-20 billion drop in GNP. Since oil can be used to great political advantage by oil-rich nations, reasonable cost and availability of foreign oil cannot be assured. The prospect of the U.S. eliminating its dependence on foreign oil while continuing high levels of consumption of oil is not an optimistic one. The U.S. has only 10 years of proven domestic oil reserves. This includes Prudhoe Bay in Alaska but not the Naval Petroleum Reserves in Alaska or the Atlantic and Pacific Outer Continental Shelf. Congressional pressure is building to tap the Naval reserves, but this cannot be counted on as a long term major source for domestic use. The offshore areas are publicly owned but have not yet been explored. This leaves future production levels uncertain.

   In addition to the oil in conventional fields, there are a large number of shallow oil fields containing oil-saturated sand reservoirs and deposits located primarily in Utah, and tar sands, shale oil, and heavy crude oil reserves located mainly in California. The ability to produce oil from these areas is heavily dependent upon the price of world oil and the environmental consequences of production. World prices would have to be quite high to induce production from these areas, and environmental standards might effectively preclude large-scale production.

   Conflicting views exist as to the long-term availability of oil. One widely held view holds that oil, and gas, are limited resources which will certainly peak out within the next few decades and run out rapidly thereafter. The opposing view, based on historical precedents and geological inference, is that there is a good deal more oil and gas to be found if the price is right and the industry responds accordingly. The problem with the second assumption is the question of higher fuel prices and their effect on consumption. Will

the consumer buy the energy at the higher price or cut consumption as was evidenced in 1974? Experts in the field have stated that higher prices will eventually lead to an even more rapid decline in production eventually due to consumer resistance. Thus, the evidence indicates that the domestic petroleum shortage is permanent and the resulting pressures will cause an accelerated shift from oil to other energy sources whenever possible.

2. Natural Gas. Most of what has been said about oil, generally applies to natural gas, our second most important source of energy. As with oil, the proven reserves of gas will suffice for approximately 10 years at present rates of consumption. The greatest potential reserves are in Alaska, which has about one third of the Nation's gas potential. Long term availability of foreign resources of natural gas is not as dependent upon the world political climate as is oil, but it is uncertain nonetheless. Canada, which is the major supplier of natural gas to P.G. and E. for use in Northern California, recently doubled the price of exported gas and indicated that it would be reducing the amount of natural gas available for export.

3. Coal. While coal provides for only 17% of domestic energy consumption, it is the most abundant U.S. energy resource, representing over 95% of total domestic energy resources. At present rates of consumption this represents 800 years of supply. The lack of demand for coal can be attributed to its relatively low energy content and the environmental problems associated with its production and use. The environmental effects of coal production are significant -- serious health effects on mine workers, reduction and contamination of ground water resources, development of highwalls in hill areas, soil erosion of strip mined land, subsidence of the land above the mines, destruction of open range and agricultural land in the Central Plains states, and an atmospheric buildup of sulfur oxide emissions resulting from the burning of coal. The energy policy issue is not whether and how to stimulate its production, but whether and how to stimulate its consumption, given the environmental constraints.

4. Hydroelectric Power. This is presently a relatively minor source of energy. There are only a limited number of sites remaining that are economically feasible and most of these are in Alaska. The primary environmental concerns are land use and river ecology. Because of these factors, hydroelectric power is not considered as a major source of power in the foreseeable future.

5. Nuclear Power. This is also a relatively minor source of energy of present. It promises, however, to be a more important source in the future as a generator of electric energy. A significant increase in the production of nuclear power is not anticipated prior to the late 1980's, but by the year 2000, it is expected to supply 30 percent of the country's electric energy. The use of nuclear power raises serious environmental issues including reactor safety, radioactive waste disposal, and nuclear theft.

## Alternative Sources of Energy

Within the next ten to fifteen years, the U.S. will have to continue to rely upon the above-discussed sources of energy. There are other sources of energy which represent potential long-term alternatives. The extent to which these "emerging" technologies will be viable sources of energy will largely depend on the advances that will be made in the next 5-7 years, the prices of competing fuels, and the commitment to their long-range use. A brief description of the more promising of these, follows:

1. Synthetic Fuels. Synthetic fuel production involves converting coal to synthetic liquid or gas fuels through a chemical process at elevated temperatures. This method overcomes the environmental hazards of direct combustion of coal. Although synthetic fuels could only supply a small amount of our gas and oil requirements by 1985, the real potential will not be realized until the late 1980's or early 1990's.

2. Solar Energy. Solar energy encompasses a wide range of technologies involving solar thermal and ocean thermal systems, solar cells and wind energy systems. Solar heating, cooling and wind energy are the most likely solar energy sources in use by 1985 and are considered environmentally harmless and essentially free sources of energy. To the extent that these and other solar resources are utilized, pollution levels should be reduced, safety increased, and diminishing fossil fuel reserves conserved. The environmental hazards of solar energy are principally aesthetic - solar batteries and windmills could replace the TV antenna on many American homes by 1990. Solar energy would be principally transmitted through electricity.

3. Geothermal. Geothermal energy has only recently been recognized as a potentially important and domestically abundant source of energy, with the major resources existing in the western states. The major environmental concerns are seismic activity, waste disposal, pollution of surface waters, subsidence, emission of noxious gases and hazardous noise in the production area. Geothermal energy is not expected to be a major source of energy until the turn of the century.

4. Energy from Wastes. The conversion of urban and agricultural wastes to energy would answer one of our major problems of today - what to do with our garbage. Considered as an emerging technology, estimates point out that as much as 10 percent of our long-term energy requirements could be met with garbage. The three major methods for conversion of these wastes to synthetic fuels are hydrogenation, pyrolysis, and bioconversion. In the hydrogenation process, organic waste and an alkaline catalyst are placed in a reactor with carbon monoxide and steam, and then heated at a medium high temperature for an hour. The product is a heavy oil with a low sulfur content and a relatively high energy content. In the pyrolysis method, waste is first shredded and dried, inorganic materials are then removed for recycling and the organic waste is then reshredded and heated. This process generally produces three different fuels - gas, oil and char. Methane gas can be produced by the third major technology, bioconversion of solid wastes through digestion by anaerobic bacteria.

No reference has been made in the discussion of existing or potential sources of energy to electricity. Electricity itself is not a source of energy, but rather a conveyor of other energy sources. Its use has grown rapidly because most fuels can be used to generate electricity. Electricity can be expected to increasingly become the dominant conveyor of power in the coming decades.

## Federal Energy Policy

There are a variety of bills related to energy pending in Congress; additional legislative proposals are being discussed by various Congressional Committees as well as by the White House. Policy recommendations of the Project Independence report are the basis of several bills proposed by the White House. It seems a certainty that many of these policy recommendations will be enacted into legislation over the next few years. Some of the more likely legislative enactments are as follows:

1. Federal legislation which would substantially increase use of public transit and discourage use of automobiles through rationing or higher gas taxes. Under such legislation, the Federal government would pursue policies to maximize current bus production capacity, expand UMTA capital grant programs and pay for operating deficits at the local transit district level.

2. Amendment of the Clean Air Act to delay implementation, or to permit relaxation of emission standards on the basis of benefit-cost comparisons, errors in air quality measurements and conflicting health effect information. (President Ford has recently proposed a 5 year relaxation of the Clean Air Act standards).

3. Legislation which would impose a tax on new car miles per gallon and/or a 20 mile per gallon auto efficiency standard.

4. Creation of a Government loan program to encourage maximum use of railroads as freight carriers.

5. Legislation requiring retrofit of existing residential buildings with thermal insulation devices and requiring new residential buildings to be fully insulated. This would involve the use of tax rebates and Building Code requirements. (President Ford has recommended a $150 tax credit to homeowners who install insulation devices).

6. Required reduction in parking standards for commercial and industrial uses to reflect air quality regulations.

## Conclusions

1. Natural gas supplies will be substantially depleted within the next 15 years and may result in new developments relying totally on electric power.

2. Gasoline supplies will be limited for at least 10-15 years.

3. Governmental energy policy will reflect an assumption that the domestic shortage of oil is permanent.

4. There will be a reduction in vehicle miles driven as a result of the cost and availability of gasoline, and governmental policies which directly and indirectly discourage use of the automobile.

5. Public transit will accommodate a significantly greater share of the travel market over the next 10-15 years.

6. Energy availability in conjunction with higher housing costs will increase the demand for existing, more centrally located, housing.

7. Integrated residential and neighborhood serving commercial developments will be more common.

## D. FEDERAL FLOOD INSURANCE PROGRAM

### Background

The federal flood insurance program is the product of three pieces of legislation beginning with the National Flood Insurance Act of 1968. The program was established to provide insurance for properties damaged by flooding and/or mudslides. This kind of damage has traditionally been placed in the "Act of God" category in insurance policies and therefore has generally been excluded from private coverage. The federal government has historically absorbed much of the emergency and rebuilding costs in disaster prone areas. These costs have been considerable. The national flood program is designed to reduce the Federal costs of disaster relief in two ways:

1. By providing a method whereby flooding losses would be shared by the sum of those people living in all flood prone areas through subsidized insurance, and

2. By compelling cities to adopt land use controls and building restrictions which reduce flood damage.

The incentive to local government to join the program is the availability to property owners of the flood insurance, which was not generally available before. Probably a more compelling reason for a City to join is the fact that a variety of sanctions are incurred by the nonparticipating municipality: in flood prone areas, no federally funded projects will be approved; no federally insured mortgages will be available; and all financial institutions which are subject to Federal regulations are prohibited from making, extending, or renewing loans on properties subject to flooding. Communities not electing to join the program may also not be eligible for federal disaster relief beyond immediate emergency efforts.

In order to join the Program, a community must make application and must demonstrate that it is acting in such a way as to reduce flooding losses through specific steps and actions. These actions include land use control measures meeting the requirements described below.

The flood insurance program is a staged one, related to the development of increasingly refined flood data. As the federally developed data becomes more definitive, controls become more restrictive. There are four stages in the process:

1. Within the first stage when areas subject to flooding from the 100 year flood ("special flood hazard area") have been mapped but the surface elevation of the flooding has not, the land use and control laws and ordinances which are designed to reduce flood losses take precedence over any conflicting laws within the defined "special flood hazard areas." "All public utilities and facilities such as sewer, gas, electrical, and water systems are to be located, elevated, and constructed to minimize or eliminate flood damage." This requirement could necessitate a significant departure from current construction practices and aesthetic standards if enforced.

2. The second stage of the program goes into effect when water surface elevations for the 100 year flood are given. The lowest floor of new or substantially improved residential construction, within the special flood hazard areas, must be above the 100 year flood. New or improved nonresidential construction could be floodproofed or the lowest floor could be above the 100 year flood to satisfy the condition. The cost of building on landfill or pilings varies with soil conditions. One study determined that costs may increase by $400 to $500 to build a slab for a small house two feet above its normal elevation.

3. The third stage begins when the areas close to rivers having special flood hazards are defined and floodway data has been provided. Based on this information, a floodway for the 100 year flood must be designated by the local government. The area designated must be sufficient so as not to increase the elevation of the flood at any point. At this stage existing nonconforming uses shall not

be expanded but may be modified, altered or repaired to incorporate floodproofing if the level of the 100 year flood is not raised by this activity and the ability of the designated floodway is not impaired except where the channel is fully offset by stream improvements.

4. The fourth stage begins when the area defined as:

   a. Coastal flood plain area having special flood hazards, and

   b. One hundred year flood surface elevation, and

   c. The coastal high hazard area

   are mapped by the federal government. Only c., Coastal high hazard area, has a formal definition given in the regulations. It is not clear exactly which areas of the City will fall within these categories. Areas subject to high velocity waters, wave wash and tsunamis and areas below the level of the mean high tide will be included. The regulations make no provision for the effect of "improvements" in coastal areas. It is therefore not known if improved dikes would make any difference on areas which would be defined as coastal high hazard area, coastal flood plain area having special flood hazard or one hundred year flood plain in the coastal area.

   When these three areas are identified on maps, existing uses on land below the 100 year flood, in the coastal high hazard area shall not be expanded and no development on land is such areas may occur unless it is:

   a. Located landward of the mean high tide,

   b. Located so that the lowest level is elevated above the 100 year flood level, securely fastened to piles, and

   c. Has no obstructions to the fill flow of tides and wind driven water.

Analysis

The City of San Jose has been notified that areas within the incorporated territory comprising approximately one third of its incorporated area, are defined as having "special flood hazards." The Federal government did not conduct comprehensive technical studies to identify these areas of "special flood hazard" but relied on a variety of existing sources of information. It is quite probable that the area so designated is somewhat exaggerated.

Because the official special flood hazard maps which have been received from the Federal government covered approximately one-third of the area of the City,

much of it already developed, the potential impact of the Flood Insurance Program on the City's inhabitants will be considerable. In one year the people within the "Special Flood Hazard Zones" could be required to spend in insurance costs an amount equivalent to the cost of the damage of the most severe flood ever experienced in the valley ($3,000,000 in 1955 on the Guadalupe and Coyote Creek). One impact of the program is to add to the cost of home ownership and thus to make the provision of adequate housing for all income levels even more difficult.

The City is currently in the process of conforming to the first phase of the program. The restrictions inherent in it are inescapable even though all flooding except salt water inundation is expected to be among the lesser safety hazards for most City inhabitants. A comparative evaluation shows salt water flooding caused by earthquake induced dike collapse to be a much greater potential safety hazard than flooding expected in a 100 year flood.

The "Special Flood Hazard Areas" now mapped for the City may be unusually restricted by the language in the regulations which require services to be "elevated." This requirement cannot reasonably be met for sewers, water and gas lines. It is in conflict with the State Public Utilities Commission order on underground power, and elevation of services cannot be construed to protect these systems during a flood.

Additional constraints will be those which eventually bring a halt to new construction and public and private renewal efforts in specific areas defined as floodways and areas of coastal hazards.

The Army Corps of Engineers has mapped those areas expected to be flooded in the 100 year flood, identifying flood elevations for Coyote Creek, Guadalupe River and contributory streams. Areas shown as one foot deep and deeper serve as a general guide to the areas that may eventually be defined as floodways. These floodways areas will experience the greatest constraint on new development or renewal. Other hazards are also present in many of the areas subject to one foot, or greater, flooding. They include seismically induced liquefaction (ground failure) potential and seismically induced dam failure potential. It may be possible to reduce the area of the floodway by construction of improvements. Given the existence of numerous other hazards in the same general areas, however, such a program might not be prudent.

Areas of potential salt water inundation have been identified in a study by a private consultant (Tudor Report, 1973). These areas will probably coincide with the Coastal High Hazard Areas which the Federal government will map. The language of the Federal regulations cannot be construed to allow reductions of Coastal High Hazard Areas upon construction of flood improvements. Thus, the land use restrictions for Coastal High Hazard areas may remain regardless of any flood control measures taken.

The federal flood insurance program addresses only measures which modify the loss potential of the flooding hazard. Actions which affect the cause of flooding are still basically a local responsibility. Flooding severity not only

depends on the amount and timing of precipitation but is intimately connected with the condition of the watershed and the availability of percolation paths. If within the highest surrounding ridges the rain that falls all had to run directly off the land, flooding potential would be vastly increased. A very hot fire in the surrounding hillsides could destroy plant root systems. The next storm could wash enough silt into percolation areas to significantly restrict them. A following storm could produce severe flooding even though it may not be an unusual storm in terms of amount, duration or even ground saturation.

Land use decisions which prevent problems may be more prudent than those which are merely reactions to problems resulting from unsatisfactory uses. Wise land use decisions on the part of the City and County are at least as important in minimizing flood hazards as the requirements of the federal flood insurance program. For this reason land with good percolation qualities, sensitive watershed areas and areas of extreme fire hazard should be considered highly important in minimization of currently projected flooding and mudslide hazards and the prevention of a large increase in flood by mudslide hazard potential.

Summary of Conclusions

1. The City has little choice but to join the flood insurance program due to the sanctions which would otherwise be imposed.

2. The federal flood insurance program will require the City to exercise more restrictive land use controls in certain predictable areas, notably those areas where flooding will be higher than one foot at 100 year intervals and areas below mean high tide.

3. Due to construction requirements which must be imposed on "substantial improvements" to existing uses in floodway areas, some uses may be phased out.

4. Broader areas, as much as one third of the City, will be affected by the financial impact of unusual construction methods and costs and the additional costs of insurance.

5. The program-prescribed, elevated, method of utility conveyance will not be adopted due to its unusual, grossly unacceptable safety and aesthetic considerations.

6. The requirements of the program may provide impetus for the channelization and "improvement" of waterways, to the detriment of flood plain management and the preservation of the natural character of waterways.

## E. SOLID WASTE MANAGEMENT

The management and disposal of solid wastes is becoming a problem of considerable proportions in many urbanized areas, including the Santa Clara Valley. At the present time, the City of San Jose is responsible for the collection and disposal of its own solid waste. This service has traditionally been contracted out to private firms. Recently the State and Federal Governments have determined that in order to qualify for assistance money, solid waste management programs must offer some degree of pollution control and resource recovery. As a condition for qualification for this assistance money, the State now requires that counties and cities adopt a joint Waste Management General Plan Element. The Santa Clara County Planning Policy Committee, which includes representatives from the County and from each of the cities, has established a subcommittee to develop such a solid waste management plan for the years 1976-1999 which will meet State requirements. The Board of Supervisors is scheduled to adopt a plan in August 1975, after which it must be approved by a majority of the cities in the County by October 1975.

Two important aspects of the solid waste situation that are relevant to San Jose and should be considered by GP '75, involve the land use implications of any proposed landfill operations and the opportunities presented by solid waste for resource recovery and energy production.

### Background

The traditional method of waste disposal in the south bay area has been land fill of the baylands and creeksides. New land fill sites now require the approval of State and regional as well as County agencies whose responsibility involves health and pollution control. There is some question as to whether any currently used sites could receive such approval if they were proposed today. As these lands are exhausted, new suitable sites must be found or new solid waste handling methods must be adopted.

The City and the County have been searching for alternatives for some time. San Jose and Santa Clara County undertook a major effort, with the help of consultants, to find solid waste management alternatives in 1966. Under a grant from the Public Health Service, the program was initiated to plan, design and construct a full-scale demonstration facility, practically and economically capable of pollution free reclaiming, reducing and disposing of solid waste materials. The project did not result in a facility as proposed and, as a result, land fill continues.

The present Waste Management General Plan study addresses Class III wastes only. Class III wastes are household and non-toxic commercial and industrial wastes. Class II and I wastes are progressively more toxic. There are no Class I or Class II disposal sites in the County.

The consultants hired to develop the State mandated Waste Management General Plan Element have developed four alternatives for the North County Area (area

north of Morgan Hill). Alternative A involves a continuation of existing land-fill systems, with some modification due to the exhaustion of some existing sites. Alternative B includes milling and ferrous metal recovery in the process. Alternative C involves milling (shredding) and recovery of ferrous metal, aluminum and fuel recovery. Alternative D includes recovery of all materials included in Alternative C as well as glass recovery. All of the alternatives include the addition of transfer or processing stations sometime before 1990. Alternatives C and D would both significantly reduce the quantity of land needed for fill sites by 1980.

Alternative C was chosen by the P.P.C. subcommittee for further study. Under this alternative San Jose would be the recipient of the fuel fraction of the waste at an energy conversion facility in the vicinity of Metcalf Road sometime after 1979. The residue from conversion, basically ash, would also be deposited there. San Jose would also be the recipient of three of the four suggested transfer stations. All cities within the County would ultimately send collection vehicles to these sites during week days. If open to the public, the transfer stations would generate household waste traffic on weekends. Solid wastes, after some degree of processing, would be transferred to the land fill sites and to the energy conversion facility near Metcalf. The preliminary work of the consultants makes no mention of who would own the various sites, the wastes, or the recovered energy, or how costs and profits would be apportioned.

The next phase of the PPC Solid Waste Management Study will present an analysis of current methods of solid waste resource recovery, including energy conversion. Work has been going on for some time to discover the best methods of reclaiming materials and energy from solid waste. Briefly, the following methods have been explored.

Burning refuse in steam generating incinerators. The heat from incineration can be used directly for heat and air conditioning of buildings, industrial processes or as steam to drive turbines to produce electricity. Several major problems arise. One involves the temperature of the steam. Turbines now being used require superheated steam which is harder to get with garbage because the heat value is less than fossil fuel. The capacity of the most efficient facilities would require greater amounts of garbage than all but the largest cities generate. Air pollution problems necessitate expensive controls. Each of these problems is on its way to solution. Fuel price increases alone may solve the last two very soon.

Burning refuse in heat exchangers. Refuse can be substituted for fossil sources of energy in already existing power boilers which produce steam for turbine generators or steam for heating and cooling. Partial substitution of refuse for fossil fuel is now being undertaken successfully in some communities.

Pyrolysis of refuse. Transportable and storable fuels (solids, oils and gases) are produced by heating waste materials to high temperatures without the presence of oxygen.

Hydrogenation. Heavy oil is produced by heating refuse in the presence of carbon monoxide and steam under pressure.

Anaerobic digestion. Methane gas is produced through the process of decomposition of organic material in the absence of oxygen. Methane can be substituted for natural gas but has a lower BTU content. There are projects underway for recovering methane gas directly from land fill. A substantial amount of methane gas could be recovered from old fill sites and new fill sites providing continuing amounts. There is some expense in cleaning the gas as it does not come pure.

Cubiting. Refuse is compacted for more efficient transportation and storage. The cubes are then used to produce fuel to add to other fuels to produce combustion heat.

Each of these systems requires some degree of refuse processing to be efficient. Standard techniques involve separation of ferrous metal with magnets, glass recovery, aluminum and miscellaneous metal recovery and shredding. This degree of processing without energy recovery is already taking place in some areas.

Conclusions

1. San Jose should work, through the Waste Management General Plan Element Study, for a Countywide waste management approach which maximizes resource and energy recovery.

2. Available land fill sites are becoming exhausted. Baylands and creek sites will probably no longer be acceptable as land fill sites. As inland sites come into use, the impact of a solid waste mangement program on the City will be more immediate.

3. The City should carefully consider the potential impacts of the three transfer stations and the fill site proposed for locations within San Jose. There are several ways in which City residents could be effected:

   - increased traffic throughout the City on major streets and possibly also on residential streets

   - an increase in noise levels accompanying the increase in traffic

   - potential for littering along routes to transfer stations unless closed refuse trucks are used, and if transfer stations or fill sites are open to the public

   - A health risk not suffered equally by residents of other cities in the County because the water system for San Jose, unlike most adjacent cities, is pumped from underground aquifers. Any groundwater contamination as a result of landfill in any site located over the aquifers would be felt almost entirely by City residents.

4. Review of any proposed land fill site should consider the following suitability factors.

   - landslide susceptibility
   - land failure susceptibility (liquefaction potential)
   - fault trace location
   - flood, dam, or salt water inundation potential
   - high water table, wet lands and lands above reservoirs
   - proximity of the site over granular soils likely to be pathways to the aquifers

# Citywide Survey

inconvenience for consumers or a diminished quality of life; for other services, deficiencies represent an absolute constraint on growth. The various services also differ in the manner by which they are funded. An understanding of the sources and limitations of funding should make the discussion of public facilities and services more meaningful. The relationship between growth and the availability and cost of services will be examined further in the next phase of work when alternative rates of growth and alternative forms of the City are considered. The information for the survey of existing facilities and services was obtained from a variety of sources including: printed data and conversations with staff of the various departments and agencies, the 1975-80 Capital Improvement Program, Projects '75 Steering Committee Report, "Measure B" survey of standards and existing service levels, "Service Level Review" conducted by the Budget Office to ascertain the operational objectives of various departments and whether they are being met.

2. Revenue Sources for Public Facilities and Services

The residents of San Jose have one of the lowest tax rates of any major metropolitan city in California. The total property tax rate for all schools, County, City and other services is $12.98 per $100 of assessed valuation based upon a typical tax code area (40-001-Central San Jose).

Information about tax revenues and their disbursement is often confusing because of the number of different taxes and taxing jurisdictions. In the limited space available this brief explanation of the major taxes and funds will review the major revenue sources and the purposes for which certain revenues can be used.

To begin, the property tax funds are distributed for tax code area (40-001) in the following manner (see Figure A)

| | | |
|---|---|---|
| County | $ 2.63 | 20% |
| City of San Jose | 1.79 | 14% |
| Schools | 8.14 | 63% |
| Santa Clara Valley Water District | .28 | 2% |
| Miscellaneous | .14 | 1% |
| Total | $12.98 | 100% |

The City of San Jose's proportion of the total property tax dollar is only 14% or $1.79 per $100 of assessed valuation. The $1.79 is further broken down for operating purposes: $1.37/$100, and bonded indebtedness: $.42/$100.

The $1.37/$100 of assessed valuation becomes a part of the General Fund which is used for operation and maintenance costs incurred by the City. The $.42 is used to pay off general obligation bonds which have been approved by the voters to finance capital improvements i.e., parks, libraries, fire stations and equipment, storm sewers, and transportation facilities. At

# DISTRIBUTION OF 1974-75 TOTAL PROPERTY TAX DOLLAR

Per $100 of assessed valuation

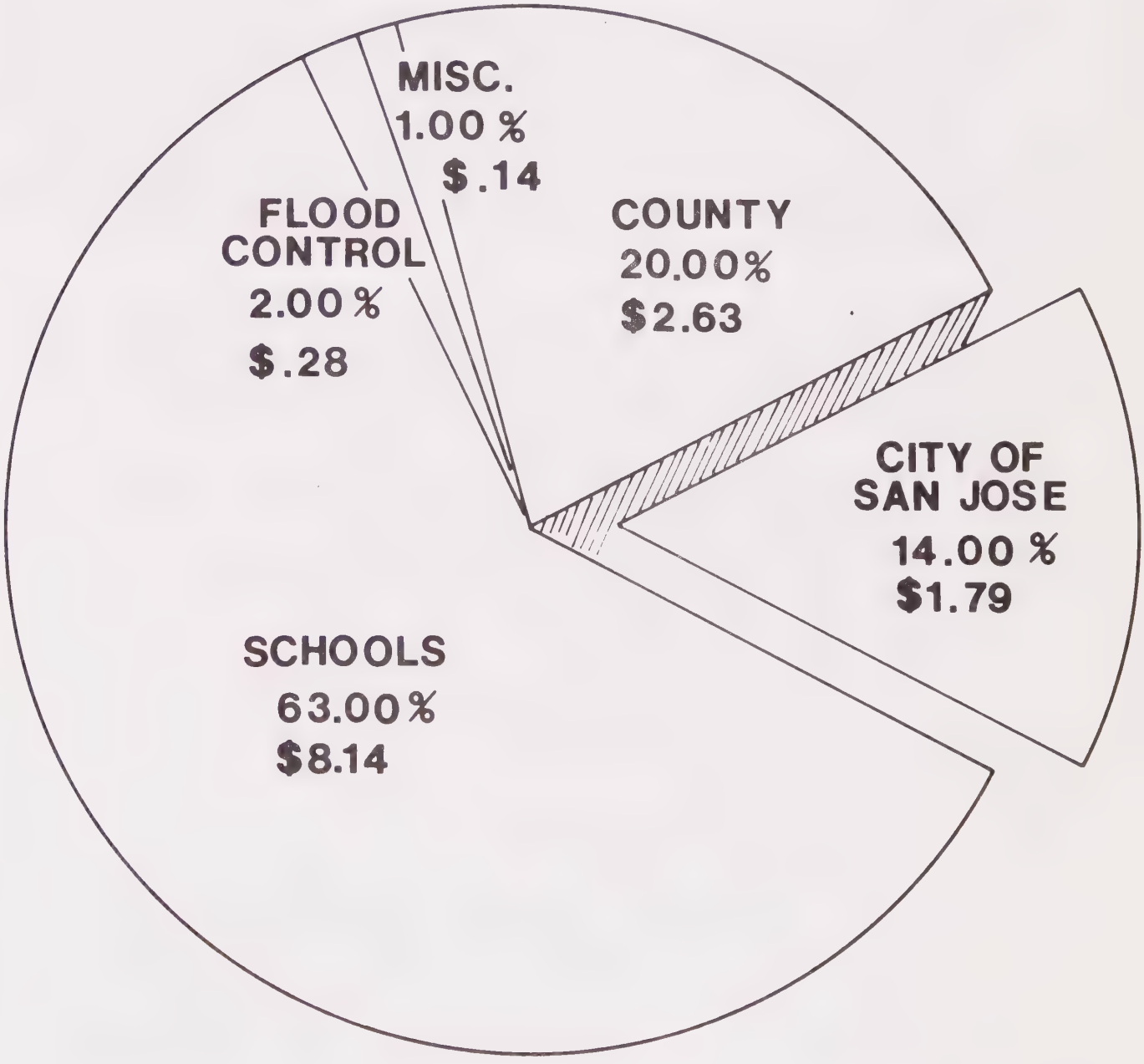



FIGURE A

this time the City could finance a $67 million bond program without increasing the current maximum rate of bonded indebtedness of $.42/$100 of assessed valuation.

Something should be said about the General Fund and capital improvements in order to see why the property tax is only one source among many sources of funding.

The General Fund finances general city services such as: general administration; public safety (police and fire); libraries, operation of the Building Department and operation and maintenance of public works. Besides the operating portion of the property tax ($1.37/$100 of assessed valuation) there are other revenue sources, some of which are: sales tax, utility taxes, cigarette tax, franchises, licenses and permits, fines, forfeits and penalties, revenue from other agencies (local, state and federal), departmental charges, etc. These sources will generate about $64 million for the 1974-75 fiscal year.

Capital Improvements (parks, libraries, fire equipment, etc.) are usually considered as the physical facilities needed for the City. The cost of capital improvements for 1974-75 is about $111 million. Slightly more than half of this cost is for the Water Pollution Control Plant. The sources of funding for most capital improvements include the following:

- Previous Bond Funds
- Present Revenue Sharing Funds (from the Federal Government)
- Community Development Block Grant Funds
- Encumbered or pledged contributions of other agencies
- Grants - already received or in application stage
- Airport Bond Funds
- Water Utility Funds
- Tax Allocation Bonds
- Special Funds (e.g. Prusch Memorial Park Fund)
- Potential matching contributions of other agencies (State, school districts)
- Gas Tax
- Connection Fees
- Construction/Conveyance Tax
- Assessment Districts

Often there is some confusion about the use of funds. Many people believe that there exists one lump sum from which money is drawn for the construction of capital improvements. This is not the case. Certain sources of funding can only be used for specific kinds of capital improvements.

The following are some examples of sources of funding and purposes for which they can be used.

Construction/Conveyance Tax (parks, fire, library)
The Property Conveyance Tax is collected by planning area from a tax on the transfer of property. The Construction Tax is collected by planning area from a tax on construction. The Construction/Conveyance Tax must be expended according to the following guidelines, established by ordinance:

- At least 60% of the taxes collected in a planning area must be expended within that planning area for park, library and fire protection facilities, exclusive of library books.

- Up to, but not more than, 20% of the taxes collected in a planning area may be expended outside that planning area for park, library and fire protection facilities, exclusive of library books.

- Up to, but not more than 20% of the taxes collected in a planning area may be expended for library books, public works and parks maintenance yards, and communication facilities in any part of the City without regard to planning area of origin.

Connection Fees (Storm Sewer and Sanitary Sewer)
The funds must be expended for the type of facility for which they are collected (e.g., storm drainage connection fees must be expended for storm drains and sanitary fees must be expended for sanitary sewers).

Gas Tax (Transportation)

In addition to assessment districts and previously approved bond programs, the primary source of funding for transportation projects is the "1943 Gas Tax Maintenance and Construction Fund" and the "1964 Gas Tax Construction Fund". Monies derived from the Gas Tax Funds must be expended for the purposes authorized by and subject to the applicable provisions of the Streets and Highways Code of the State of California. These funds can only be spent on the select street system for construction. Generally, funds can be used for two types of activities: (1) street and road construction, including street improvements, bridges, overpasses, culverts, traffic control, safety signals and street lighting and (2) street maintenance including physical maintenance and operation of traffic services. These funds cannot be used for financing other facilities, such as parks or libraries.

On November 26, 1974, City Council adopted Ordinance #17507 creating the Residential Construction Tax Contribution Fund. This Ordinance provided a construction tax levy on all dwelling units and each mobile home lot in a mobile home park, and provides that the revenue generated will be used for reimbursement to developers for cost of center strip paving for major streets. This program is designed to replace the City's previous Center Strip Paving Program funded from Traffic Capital Funds.

Previous Bonds
Previous bond funds are spent for specifically approved projects.

## 3. Water Supply

### Responsibility and Facilities for Providing the Service

The responsibility for providing water for San Jose and the whole of Santa Clara County rests with the Santa Clara Valley Water District (SCVWD). Its responsibility is to provide an adequate quantity and quality of water to satisfy local water demands. The South Santa Clara Valley Water Conservation District has a similar, but more limited responsibility, and operates only in the most southerly part of the County. In exercising its responsibility, the Santa Clara Valley Water District administers most of the reservoirs in the County, contracts for most of the water imported into the County, and operates treatment plants and primary water distribution networks. It also sells treated water to local water companies and controls the withdrawal of water from groundwater (subsurface) reservoirs, in part by charging for water drawn from the ground. In addition to regulating groundwater withdrawal, it maintains a program for replenishing the groundwater reservoir.

The SCVWD does not distribute water directly to the domestic consumer. That function is performed by municipal or private water systems. Nine cities in the County operate water systems which supply all or a portion of the water needed by their communities. San Jose operates a water system which primarily serves the Evergreen area, and is served by two major private distributors and a few small private distributors. In addition to purchasing water from the SCVWD, local water companies contract directly for imported water and pump water from their own wells ( subject to regulation by the Water District). The only water company which treats its own water is San Jose Water Works, which operates the Montivina Treatment Plant. The individual water companies operate their own conveyance systems for transporting water from the SCVWD treatment plants to their respective service areas.

### Sources and Adequacy of Supply

The four current sources of water in Santa Clara County are:

1. Natural Groundwater. Three interconnected groundwater basins comprise the natural groundwater reservoir in the County. Extraction from this reservoir provides the greatest single source of domestic water in the County. It provides for 60% of the water demand in the North County (from Tulare Hill, north) and 100% of the water demand in the South County. The groundwater system serves useful functions in addition to supplying water. Surface recharge areas allow surface water to percolate downward, transmitting water through gravelly soils into the deeper confined acquifers of the groundwater basins. In the process, water is filtered and will subsequently require less treatment for domestic use than is required for surface waters. In this manner, water can be treated and stored naturally, reducing the need for man-made facilities.

An equally important function of the groundwater system has to do with its relationship to ground subsidence. In the recent past, the valley groundwater basis has been overdrawn from excessive pumping, particularly in dry years. The result was a significant lowering of the groundwater level with resulting land subsidence. The SCVWD instituted, and continues, a program of groundwater recharge which has aided in recovery of groundwater levels and has stopped land subsidence. The Water District has established 161,700 acre feet/year as the maximum amount of water which can be extracted without overdrafting the groundwater reservoir.

2. Surface Reservoirs. The Water District has constructed a total of 12 reservoirs on major streams running into the valley. These reservoirs capture and contain seasonal runoff from surrounding watersheds. Surface reservoirs provide the primary source for groundwater recharge with only a small proportion used directly for domestic purposes. 62,400 acre feet/year of surface water is used for groundwater recharge and 13,000 acre feet/year is treated and supplied to consumers. Water stored in reservoirs is periodically released into streams which convey it to on-stream percolation areas. Most reservoirs are used secondarily for public recreation.

3. Imported Water-State Water Project. The South Bay aqueduct is part of the much larger State Water Project. Untreated water is imported from the Delta via this aqueduct. 88,000 AF/yr are imported. Half of this amount is treated by the Water District and distributed to local water suppliers. The remaining water is utilized for recharge purposes.

4. Imported Water - San Francisco Water Department. The City of San Francisco imports water via the Hetch-Hetchy Aqueduct from the Sierra Nevada Mountains. Local water companies contract with San Francisco for 50,000 AF/yr of this water.

At present, there is a total of 375,080 acre feet/year of water available for use within Santa Clara County. This amount is more than adequate for present-day need but water demand and population growth are directly related. There will inevitably develop a water supply deficit at present rates of population growth and present levels of consumption. It is projected that the present water surplus will be exhausted by 1978. Unless demand is reduced or the supply is increased, water supply could become a limiting factor to growth.

Meeting Projected Demand

The level of future water demand, and consequently the magnitude of deficit beyond 1978 based on current supply, is dependent upon the level of population growth. Growth projections recently prepared for the Water District are considered by the Planning Department to be unreasonably high and thus the projections of future water demand might be somewhat exagger-

ated. There is no question, however, that increases in demand will be substantial. Based on existing sources of water plus the unused portion of the allocation of imported water as explained below, the water supply deficit is projected to be 80,100 AF/yr in 1990 and 105,300 AF/yr in 2000. There are three potential means of meeting future water demand:

1. Reducing Demand. Reducing the amount of water used through a combination of consumer conservation measures offers one possibility. Residential water use is the largest single consumer of municipal water and some of this usage could be considered "discretionary", related to the increasing amenities of life. This discretionary water would be the primary target of any program aimed at reducing consumer demand. Reduction of water use could be achieved by use of water-saving appliances, water metering and pricing policies, and through new lawn and gardening techniques. Higher densities in residential development would save on outdoor water use by reducing irrigation needs. These measures could not by themselves offset the projected supply deficit.

2. Conservation of Supplies. Facilities Expansion: New and/or enlarged facilities could be constructed to capture and hold a greater amount of local runoff. This would increase reservoir yields for an expanded groundwater recharge program and provide additional water for direct treatment and use. Studies by the SCVWD indicate that it would be prohibitively costly to do this on a scale sufficient to satisfy the ultimate projected deficit. It might be economically feasible to save 27,000 AF/yr.

   Wastewater Reclamation: The State Department of Health states that there is insufficient data about the long-term effects on human health to allow reclaimed water to be used for direct domestic use or for recharge purposes. The only remaining viable use of reclaimed water is for agricultural irrigation. There are problems associated with such usage, including the distance of the reclamation plant to the agricultural uses, the continued decline of agriculture within the County and the additional capital improvements which would be necessary at water pollution control plants to add full tertiary treatment processes. The use of reclaimed water for agricultural irrigation would not resolve the total supply deficit as it is not the major water use. The SCVWD has decided that wastewater reclamation is not a defendable source of domestic water.

   Weather Modification: An increase in rainwater provided through the District's cloud-seeding program is another alternative source of supply. The amount of water which can be provided is not that significant and the environmental impact of the program is yet to be assessed.

3. Importing More Water. The SCVWD entitlement to South Bay Aqueduct water can be increased from 88,000 AF/yr to 100,000 AF/yr. The acquisition of 50,000 AF/yr of Hetch Hetchy water can be increased by 14,000 AF/yr. These additional amounts were included in the above projections of future supply. There is an additional 22,000 AF/yr of South Bay Aqueduct water which is available to Bay Area Counties but has not been allocated. The SCVWD might gain entitlement to that amount. No further amounts of Delta water could be accommodated with the present facilities.

   Importation of Delta water sufficient to satisfy the long term water demand would require the construction of another conveyance system. A facility parallel to the South Bay Aqueduct and the proposed San Felipe project are the most likely options. The San Felipe Project is part of the Central Valley Project of the U. S. Bureau of Reclamation and would convey water from the Sacramento-San Joaquin Delta to Santa Clara and San Benito Counties via a system of tunnels, pipelines and canals. Water would be deposited at the base of Anderson Dam for further distribution by the Water District. The Bureau of Reclamation would fund the improvements conveying the water to Anderson Dam and the SCVWD would finance the distribution, treatment, and storage of facilities within the County. Water could be initially available in 1982 barring lengthy lawsuits aimed at halting the project, with the Project ultimately importing 145,000 AF/yr. This would satisfy the full deficit through year 2020.

Of the alternatives described, only the San Felipe Project, a conveyance facility parallel to the South Bay Aqueduct, or large scale wastewater reclamation would seem able to supply long-term water needs. Economic feasibility studies have shown that there is no clear advantage among these alternatives in terms of unit costs of water delivered. The SCVWD is actively supporting the San Felipe Project due to the differences in terms of timing and certainty of supply among the alternatives. There is a great deal of uncertainty as to when wastewater reclamation might provide a reliable source of supply. A parallel S.B.A. facility would require years for the necessary planning and design work and the necessary government approvals. Implementation of the San Felipe Project could begin very soon. A combination of measures for conserving supplies and reducing demand could supplement existing water sources until a new major source was implemented.

Conclusions

1. The Santa Clara Valley Water District is responsible for planning and providing for long-term water needs of the County. In this regard, they are presently investigating alternative programs for increasing the long-term water supply.

2. The most important single source of water for domestic use at present is the groundwater reservoir. It should be protected against overdrafting and infiltration of pollutants.

3. Present water supplies will not be adequate to satisfy future demand and the magnitude of the deficit will be dependent upon the level of population growth which occurs. A deficit could be realized beginning in 1978. If supplemental water is not programmed for delivery concurrent with demand increases, water supply could become a growth-limiting factor.

4. Water supply deficits can probably be alleviated for a few years by reduced domestic consumption, measures to conserve supplies, and the full use of allocated import water.

5. Although wastewater reclamation could meet future water supply needs and eliminate dependence upon imported water, it will probably not be a suitable source of domestic water for a number of years.

6. If approved, the San Felipe Project could begin importing water by 1982 and could meet long-term water needs.

## 4. Water Service

### Definition of Service and Identification of Providers

The water supply and distribution system which serves San Jose is a composite of a number of private and public firms. As discussed above, the Santa Clara Valley Water District (SCVWD) has the responsibility of providing an adequate amount of water to meet local needs. The preceding discussion focused on water itself, the supply of it and the agencies and facilities for making it available. The discussion which follows addresses the distribution system, the agencies and facilities for distributing it to the consumer.

Domestic water is supplied to San Jose by five distributors as shown below:

| Agency | Area Served | Miles of Water Mains |
|---|---|---|
| San Jose Water Works (private) | Most of San Jose, portions of neighboring cities | 1800 |
| San Jose Municipal Water system (public) | Portions of Evergreen and Alviso | 60 |
| Great Oaks Water Co. (private) | Portion of Edenvale | 87 |
| Campbell Water Co. (private) | Portion of West Valley | 63 |
| San Jose Highlands Water Co. (private) | San Jose Highlands area | 4 |

# WATER SERVICE BOUNDARY


1. San Jose Water Works
2. Campbell Water Co.
3. San Jose Municipal Water
4. Great Oaks Water Co.
5. San Jose Highlands Water Co.

At this time 60% of the water supplied by these agencies is extracted from the ground. The remaining 40% is a combination of imported and surface water, most of which is purchased from SCVWD.

## Levels of Service

### A. Optimum service

The criteria used in San Jose's Urban Development Policies to determine whether water service meets a minimum standard is simply "yes" or "no" as to whether an existing system can serve an area. San Jose Ordinance No. 17507 has further specified that the system must be capable of providing minimum service level with regard to fire capacity. In single-family residential areas, this fire flow capacity is 1500 gallons per minute. Commercial and industrial areas require higher capabilities.

The City Public Works Department has defined a desirable standard for water systems based on the ability to provide uninterrupted service at working pressure of 40 to 100 pounds per square inch at all times. All of these standards are based on the assumption that a sufficient supply of water will be available to meet demand.

### B. Existing service

Preliminary examination by the Policy Research Section in connection with the "Measure B studies" on the topic of availability of services and facilities within the Urban Service Area has determined that all developable lands in the City's Urban Service Area can be adequately served by the existing supply and distribution system. Most land in the Urban Reserve below the 15% slope can also be served. Coyote Planning Area is an exception. At this time no water service is available. Private wells are used to support the minimal development which is there. Older areas of the city may have lower service level with regard to fire demand capacity and water pressure in general. Downtown especially has low water pressure due to the extremely small size of the mains, in some cases 2 inches in diameter. High fire insurance rates are paid by property owners in these areas. New sections of the city have excellent service and new construction must meet the standards established by ordinance.

## Remedial Actions

For those areas of San Jose which have inadequate service at this time, little can be done to remedy the situation. No legal means are available for forcing the privately owned water companies to upgrade existing systems. An assessment district could be formed to raise funds necessary for bringing a deficient system up to standard.

Water projects are funded in the 1975-80 Capital Improvement Program for the Evergreen area. The purposes of these projects are to maintain service level and equalize water pressures.

## Provisions for Additional Growth

The question of availability of water service is not significantly related to locational factors but rather to demand for water by the city as a whole. The physical facilities exist to support development consistent with the current general plan and any likely changes. Redevelopment in now-deficient areas would require new water mains to bring the system to standard; but generally, anticipated growth could be accommodated with the exception of the hills and of Coyote Valley.

To develop most of the hillsides, the appropriate water supplier would have to have its service area boundaries approved for expansion by the Public Utilities Commission. Water mains and pumping facilities would be necessary and a reservoir would have to be constructed at least 100 feet above the elevation of the area to be served.

Provision of water in Coyote would require the development of a complete water system which would pump water from wells in that Valley. Mains would have to be laid as none now exist.

Supply remains the most important determinant of level of water service for the major portion of San Jose. The topic of fresh water supply was treated in depth in the preceding section. In summary, the current supply of water, primarily from wells and imports, is sufficient to meet projected needs to 1980-82. This is based upon projected growth trends. Additional interim demand can be met by expanding imports via the South Bay Aqueduct or over-drafting the groundwater basin. Long-range demand can be met through implementing the San Felipe project, or undertaking an array of local water supply and conservation programs. Wastewater reclamation would also supply long-range domestic needs; however, reusing water has lingering health issues which must be resolved. Importing San Felipe water would effectively preclude the need to reuse local water through the year 2020.

## Conclusions

1. The existing water supply and distribution system can adequately serve all developable lands in the Urban Service Area.

2. Changes to increased densities or to commercial or industrial use could create the need to upgrade the water system in order to meet fire-flow requirements and desirable pressure standards.

3. Inadequacies which do exist will remain unless an assessment district is formed for the purpose of redeveloping the system.

4. Development in the hills would require mains, pump station and reservoirs higher in elevation than the service area.

5. Development in Coyote would require development of a water system which would pump water from wells within Coyote itself.

6. An adequate supply of water, rather than the adequacy of the distribution system, may be the greatest problem to continued development.

## 5. Sewage Treatment

### Definition of Service

Waste water and effluent produced within San Jose is treated at the San Jose-Santa Clara Water Pollution Control Plant located in northern San Jose. The plant is part of a sub-regional water pollution control network with additional plants located in Palo Alto and Sunnyvale. In addition to serving the Cities of San Jose and Santa Clara, the WPCP provides service to the Burbank, Cupertino, Milpitas, and Sunol Sanitary Districts, and County Sanitation Districts 2, 3 and 4. Included within C.S.D. 4 are the Cities of Campbell, Los Gatos, Monte Sereno and Saratoga.

Since 1959, San Jose and Santa Clara have jointly owned an undivided interest in the treatment plant, sharing in the capital and operating costs on a pro-rata basis. This is annually determined according to the ratio of each city's assessed valuation to the total of both cities' assessed valuation. The percentages are approximately 81% (San Jose) and 19% (Santa Clara). The City of San Jose administers plant operations. Funding for major plant improvements come largely from Federal (75%) and State (12½%) grants.

Two umbrella agencies exist in the Bay Area which affect local water quality control plans and thus, operations of the Treatment Plant. The Bay Area Sewage Services Agency (BASSA) is the regional sewage planning and coordinating agency. BASSA was formed through State legislative mandate and operates closely with the State Water Resources Board in preparing regional water quality plans. The agency coordinates regional plans and programs and oversees water quality implementation. It also has the power to levy a tax and effectuate plan implementation if local agencies fail to comply. Their regional Basin Plan is currently being prepared, dealing with regional water quality.

The second agency is the South Bay Dischargers Authority. This is a limited purpose agency with the responsibility to plan, acquire, construct, maintain and operate a pipeline and appurtenances for joint disposal of wastewater. Also, sub-regional sewage treatment planning and coordination occurs within the agency framework. The South Bay Dischargers was formed voluntarily under government codes regulating "authorities". Its membership includes Palo Alto, Sunnyvale, Santa Clara and San Jose, operating through a joint exercise of powers agreement.

### Level of Service

The existing water pollution control plant provides primary and secondary treatment capabilities of 160 million gallons/day (MGD), serving a 1973 population of 760,000 within its service area. Excess primary and secondary capacity should prevail until 1990-1993. Treated effluent is released into the South Bay via the Artesian Slough, to Coyote Creek and thence into the Bay.

Plant improvement is currently being studied within the context of a coordinated sub-regional water treatment program. Phase I improvements include:

1. Providing partial tertiary treatment capabilities. This is proposed in response to stricter Federal water quality control regulations and the Regional Water Quality Control Board's water quality objectives. The objectives become effective in 1976. A program is underway to improve the treatment process by adding new tertiary processes including facilities for biological nitrification and filtration treatment. Design capacities have been sized for the short-term future--to 1985. There is no pending plant expansion, however, in terms of increased treatment capacity.

2. Construction of a "regional interceptor conveyance outfall" pipe to collect treated effluent from the sub-regional plants. Effluent will be transported to a point north of the Dumbarton Bridge for release. The pipeline will be sized for year 2000 design flows and eliminates release of effluent into the South Bay where dilution is inadequate.

3. Two small water quality control plants have been phased out in Milpitas and their 4.5 MGD flows assigned to the SJ-SC WPCP for treatment.

Phase II improvements are proposed as options, to insure flexible decision-making, pending changing condiditons between now and the proposed 1983-84 implementation date. Improvements may include: expanding plant capacities for future loads, providing higher treatment levels, extending the outfall toward the central bay or into the ocean, and possibly developing water reuse markets.

Currently proposed plant improvements are largely financed through government subsidies: Federal Environmental Protection Agency's share of 75%, State Water Resources Control Board's share of 12½% and the local share of 12½% distributed proportionately between San Jose and Santa Clara. Other communities and sanitation districts do not own portions of the WPCP outright. Instead, each agency purchases necessary plant capacity as well as contributing proportionately to plant operations and maintenance.

The Federal government has required that an Environmental Impact Statement be prepared for the proposed plan with participation by a multitude of affected agencies. This is the last hurdle before beginning project construction. Previously, an EPA restriction was placed on the amount of subsidy funds available for plant improvements. The purpose was to inhibit continued population growth in the interim because the sewage service area is within a critical air pollution basin. The effect of this was to reduce full treatment capabilities to the fundable hydraulic capacity of plant improvements (for grant purposes) of 137.5 MGD, based on reduced projected population growth, plus an additional plant improvement of 5.5 MGD, funded solely from local funds. Thus, the design capacity equals 143 MGD, and the net effective capacity of the plant is reduced by 17 MGD below the original primary and secondary capacities of 160 MGD.

The 138 MGD design capacity was based on the lowest population growth rate projected by the State Department of Finance. This growth rate assumes zero net State in-migration and only a replacement birth rate over a ten-year

period. The Department of Finance's low series of population projections are approximately 10% below ABAG projections, which are typically lower than local projections. The additional 5 MGD was added so that plant capacity will approach a more realistic growth rate through 1985. The current plant expansion plans are termed in its E.I.R. as "growth accommodating" with a negative growth inducing impact.

Future Concerns

The WPCP will have excess primary and secondary treatment capacities through 1990. However, tertiary treatment facilities have only been sized for 10 years, to 1985, assuming a low growth rate. The additional 5 MGD capacity compensates somewhat for the disparity in growth projections. It is entirely likely, however, that population growth will exceed the plant's capacity for tertiary treatment prior to growth to continue. A significantly high rate of industrial development, particularly heavy water-using industries, would also impact the plant's ability to accommodate continued residential development. In this case, the rate of industrial development would have to exceed the projected rate of industrial growth which has already been programmed into the plant. If water quality standards were to become more stringent, even more additional facilities would need to be constructed. The likelihood of exceeding plant treatment capacity by 1985 could be diminished somewhat if a decline in the canning industry occurs, thereby freeing presently allocated plant capacity for future domestic and industrial growth. Additionally, even though secondary facilities have capacity perhaps to year 1990, including partial nitrification, a more frequent "filter backwash cycle" may provide an acceptable treatment level for several additional years.

According to Treatment Plant personnel, Federal monies will probably not be available for future plant expansion so that local funding mechanisms will be required. Without Federal subsidies, the air pollution issue will probably not create a restriction to future plant expansion as previously occurred. Thus, San Jose and Santa Clara can expand plant capacity in the future within the limit of local funding capabilities. Such funds might be generated through general obligation bonds, requiring two-thirds of the voters' approval of such a measure. Another limited source of future revenues could be via a small, incremental increase in the Sewage Service and Use Charge Fund, prior to the time of plant construction.

Water reclamation and reuse is being investigated as to economic, market and public health questions. Treatment Plant personnel believe that reclamation will become a reality at some time in the future, perhaps 10-20 years. Complete tertiary treatment, however, would be necessary before urban reuse could occur. Local reclamation is being considered as a long-range alternative to fresh water importation, but the need for local water reclamation would diminish if the San Felipe project is approved. No definitive reclamation plans are pending until multiple issues are resolved in the future.

Lastly, the SJ-SC WPCP EIR states the zoning around the plant should create buffer zones between it and surrounding land uses which would find eminating

odors obnoxious. This is also a "condition" of conceptual approval of Federal grant participation.

Conclusions

1. The SJ-SC WPCP now has the capability to provide primary and secondary treatment for 160 MGD of waste water and effluent. Based on anticipated rates of population growth, this capacity should suffice until approximately 1990.

2. In order to meet water quality standards, partial tertiary treatment must be provided. Funding is available for the facilities for providing this level of treatment for 143 MGD. Wastewater flows are likely to reach this level by 1985.
   - the likelihood of exceeding treatment capacity by 1985 could be diminished somewhat if a decline in the canning industry occurred.
   - a significantly higher rate of industrial development than that programmed into the design of the plant, could increase the likelihood of tertiary treatment capacity being reached prior to 1985.

3. Federal grants cannot be relied upon to provide the funds for expansion of tertiary treatment capacity from 143 MGD to 160 MGD, or for expansion of capacity for all levels of treatment beyond 160 MGD. It must be anticipated that future plant expansion will necessarily be financed solely from local resources.

4. In the event that added capacity is not provided concurrent with growth, wastewater would be inadequately treated and would violate water quality standards. The City could then expect to be heavily fined each day that water quality standards were exceeded, or incur a restriction on the issuance of building permits until capacity was made available.

6. Sanitary Sewers

Definition of Services

The sanitary sewer system consists of small capacity lines from the sewer sources which feed into larger laterals which in turn feed into even larger capacity mains or trunk lines which are intercepted by lines connecting to the Water Pollution Control Plant. From that point, the wastewater is treated and discharged into San Francisco Bay.

This section includes only a description of San Jose's permanent sanitary sewer facilities.

Sanitary Sewer Mains: Sanitary sewer mains are defined as those lines in the sewage collection system which extend between the sewage treatment plant's intercepting lines and the lower capacity lines adjacent to sewage sources. Sanitary sewer mains vary in diameter from ten to sixty inches.

The City maintains approximately 1,230 miles of such lines.

Interceptor Sewer Lines: Interceptor sewer lines are defined as lines which connect main lines to the treatment plant. There are a total of six miles of interceptor lines which are between sixty and ninety inches in diameter.

Water Pollution Control Plant: The Water Pollution Control Plant is designed to treat wastewater received from the sanitary sewer system and to discharge the treated effluent into the San Francisco Bay at a point where tidal action and bay water circulation will promote diffusion.

Jointly owned by the Cities of Santa Clara and San Jose, the plant is located in the Alviso Planning Area at Zanker and Esteros Roads. Existing facilities include primary and secondary treatment areas on 54,945,278 square feet of property. To date, land acquisition and construction costs for the treatment plant total over $69 million. Recently completed additions to the primary and secondary treatment facilities have raised the capacity of the plant from 94 million to 160 million gallons per day.

In addition to the City's sewer system there are two special sanitary districts, (Sanitation District 2 & 3), within the City's Sphere of Influence. These districts were formed in the "fifties" to meet a pressing need for services in order to develop without annexation to San Jose. To date, neither the City nor the County has found an effective device for virtually requiring annexation of urbanized county pockets. These special districts are basically collection systems with treatment of the effluent provided by the City.

Level of Service

A. Optimum service

The objective of the City's Sanitary Sewer Systems Program is to install and maintain an uninterrupted collection and conveyance system of all liquid and water-carried wastes from residences, commercial buildings, industrial plants and institutions and conveyances to the Water Pollution Control Plant. To maintain the level of service the system requires continuous inspection, maintenance, repair and new installation. But ultimately, it is the capacity of the treatment plant to process sewage into innocuous components suitable for discharge without danger to public health and the ecology of the Bay, which determines the optimum level of service.

B. Existing Service

Most planning areas meet desirable service levels. However, some older areas of the City such as Central, Willow Glen, and West Valley Planning Areas are now experiencing problems as a result of aging and deterioration of facilities. Reconstruction is required to maintain an adequate level of service. Population growth in the fringe planning areas is causing near capacity flow in trunk lines in the inner city through which waste must flow to reach the

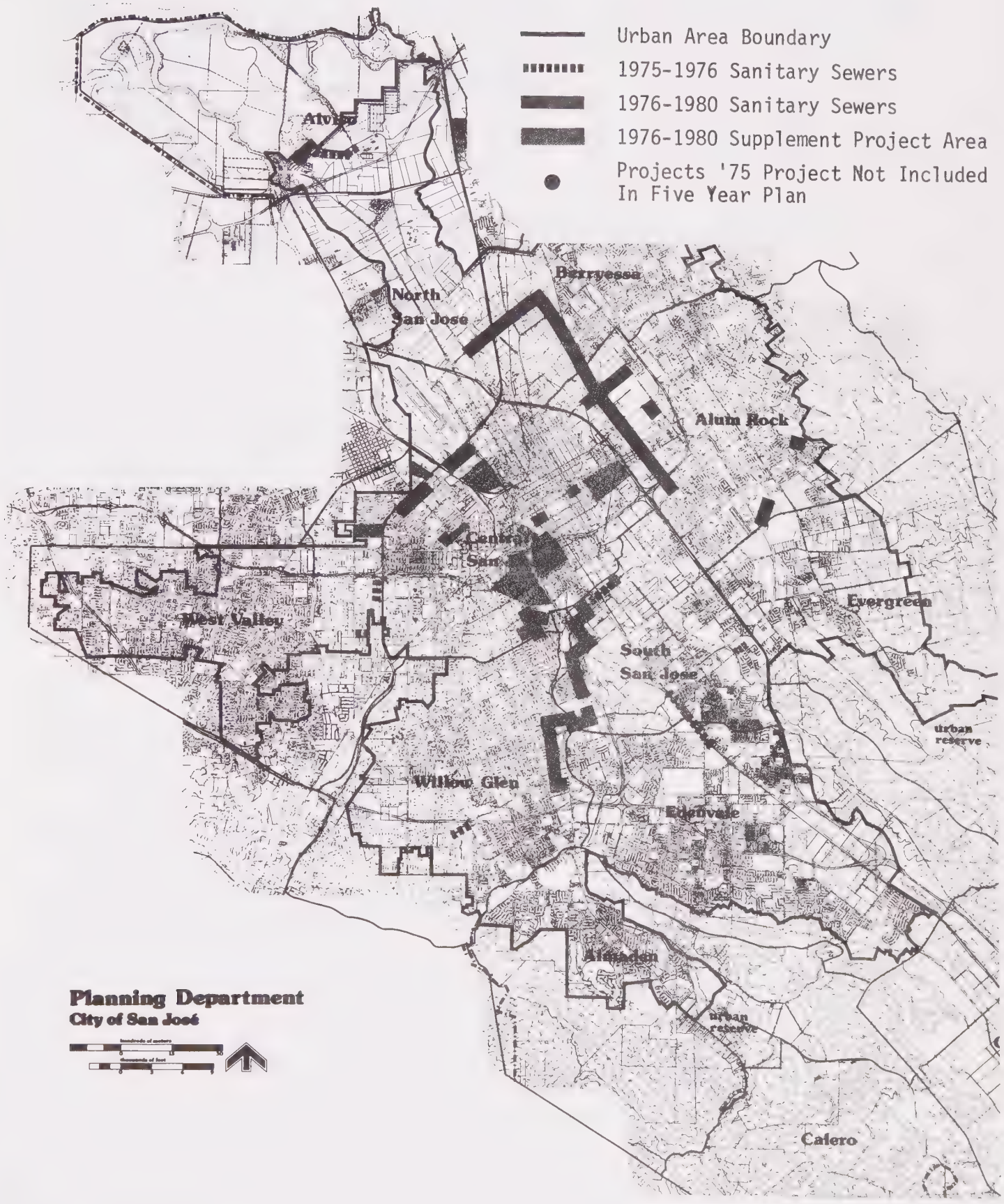
treatment plant. Supplemental sewer pipelines will need to be constructed to provide additional capacity to anticipated overload conditions.

Remedial Action

A number of projects are programmed in the Capital Improvement Program and Project '75 within the Urban Service Area to alleviate existing and anticipated sanitary sewer problems. The following projects are funded through a connection fee reserve and are programmed for construction over the next five years in the 1975-80 C.I.P.

| | PROJECT FOR | |
|---|---|---|
| Planning Area | Identified Need | Anticipated Growth |
| Almaden | None | None |
| Alum Rock | CIP Clayton Rd. | CIP East San Jose Interceptor Sewer<br>CIP Mabury Rd.<br>CIP Tully-White |
| Alviso | CIP Jackson Avenue<br>CIP Alviso Supplement | |
| Berryessa | None | None |
| Cambrian-Pioneer | | CIP Lone Hill Creek Unit #1 |
| Central | CIP Irene Street<br>CIP Almaden-Vine Connection<br>CIP Davis Street<br>CIP Hester-Race Supplement<br>CIP San Antonio-Santa Clara Supplement<br>CIP Taylor-Emory<br>CIP Vermont Street<br>CIP Willow-Auzerais Supplement | |
| Edenvale | None | None |
| Evergreen | None | None |
| North San Jose | CIP Brokaw-Zanker Unit 2 | |
| South San Jose | CIP Monterey-Snell Supplement | CIP Almaden Rd. Supplement Unit 3<br>CIP Almaden Rd. Supplement Unit 4 |

# SANITARY SEWERS
## Five Year Program
## 1975-1980



PROJECT FOR

| Planning Area | Identified Need | Anticipated Growth |
|---|---|---|
| West Valley | CIP Payne Avenue | CIP South Clover Unit #1 |
| | CIP Forest-Homewood Supplement | |
| | CIP Sherwood Avenue | CIP South Clover Unit #2 |
| Willow Glen | CIP Hervey-Padres Supplement | |
| | CIP Willow Glen-Gardner Supplement | |
| | CIP Almaden Road Supplement Unit 2-A | |
| Citywide | CIP Reserve for Industrial Development Projects | |

Provision for Additional Growth

All of the projects are proposed to be constructed within the present Urban Service Area. Most are rehabilitation projects necessary to meet the need of the existing community. However, the potential service area of some of the projects extends well into the Urban Reserve. Such funded projects include Almaden Road Supplement Unit #2A, #3, and #4, also the East San Jose Interceptor. Although these projects would upgrade the existing System, they will also accommodate additional growth and extend the capacity for sewer service outside the Urban Service Area.

Conclusions

1. Most areas of San Jose meet the desirable level of sanitary sewer service.

2. Deficiencies exist in the older sections of Central, West Valley and Willow Glen.

3. Some deficiencies will be remedied by projects funded in the 1975-80 C.I.P.

4. Some projects, due to increased capacity, will extend sanitary sewer service into the Urban Reserve.

## 7. Storm Sewers

### Definition of Service and Identification of Provider

The City maintains a storm sewer system to carry rainfall or water that otherwise finds its way into the streets, to points of discharge from which it will eventually travel into San Francisco Bay. San Jose does not utilize the sanitary sewer system for this purpose as during periods of heavy rainfall a combined system is sometimes overloaded, causing a "back-up" of sewers, and a combined system requires a greater capacity of a treatment plant. The storm sewer system consists of branch sewers which are the primary collecting points and storm sewer mains, varying in size from 12 to 90 inches, into which the branches feed. The mains in turn convey the runoff to points of discharge in creeks and rivers, from whence it ultimately finds its way to the Bay.

### Levels of Service

A. Optimum service

The City Public Works Department has storm drainage standards which it utilizes as its operational objectives. The desirable storm service level is the provision of capacity for 3-year storm runoff using the street for overflow.

An additional standard was given with reference to system maintenance. Ideally, discharge outlets should be cleaned once each year and lines inspected prior to rains. Emergency service should also be provided to clear each blockage of the system.

B. Existing service

Most areas of San Jose meet the desirable level. However, some older sections only have a capacity for the 1-year storm. The major part of Central planning area falls into this category. Alviso, lying below sea level, has severe inadequacies. Other areas of deficiency include South San Jose/Alum Rock/Evergreen in the vicinity of Tully and King Roads, Evergreen by Aborn and San Felipe Roads and Cambrian, East of Union Avenue. The latter is a County pocket which was allowed to develop without sewer service. When or if this area were to annex the City would have to provide this service. Coyote has no existing storm drainage facilities. However, as there is no development, the area could not be considered inadequately served.

### Remedial Actions

A number of programs are in existence which deal with alleviating existing storm drainage problems. These are the Capital Improvement Program, Projects '75 and the Community Development Block Grant Program. In the following list, projects in the CIP and CDBG have funding available.

Projects listed under Projects '75 are included in the $67 million bond program. Additional projects were recommended but received lower priority. Completion of these projects will resolve some of the identified problems; others will remain. Alviso is significantly neglected.

Funding for storm sewers is mainly provided by connection fee monies included in the Storm Drainage Fee Fund. Money contained therein can be expended in any area of the city.

| | PROJECT FOR | |
|---|---|---|
| Planning Area | Identified Need | Anticipated Growth |
| Almaden | None | None |
| Alum Rock | CIP Tully-Coyote Unit #2 | None |
| Alviso | None | None |
| Berryessa | None | CIP Murphy-Coyote (Ind.) |
| Calero | None | None |
| Central | CIP McKendrie-Guadalupe Area<br>4th St. Supplement Unit #2<br>CDBG Olinder Supplement<br>Projects '75<br>Taylor St. Underpass<br>Alameda Underpass | None |
| Coyote | None | None |
| Edenvale | Projects '75<br>Monterey-Canoas Unit #8 | Projects '75<br>Cahalan: Blossom Hill to Branham |
| Evergreen | CIP Aborn Rd.: White to Capitol<br>Tully-Coyote Unit #2 | CIP King Rd.: Silver Creek to Aborn |
| North San Jose | None | |
| South San Jose | CIP Tully-Coyote Unit #2 | None |
| San Felipe | None | None |
| West Valley | None | None |
| Willow Glen | CIP Dent-Ross Creek #2 | |

# STORM DRAINAGE

## PROBLEM AREAS

## Provision for Additional Growth

Some of the projects listed above are in anticipation of both industrial and residential growth. Funded are: Murphy-Coyote, to provide for industrial growth in Berryessa; also King Road, Silver Creek to Aborn, to serve residential development.

One Edenvale residential project to be implemented in conjunction with the construction of Cahalan Road from Blossom Hill to Branham is included in the Projects '75 bond program. This latter property is now under Williamson Act contract.

Further growth will demand storm drainage facilities beyond those now funded or those in the bond program. As the Storm Drainage Fee Fund provides for storm sewer construction simultaneously with new development, service to these areas should not present a problem. If breaks exist in the street system, however, the storm sewer system will be effected as the two are built together. Older areas now below standard will only slowly be rehabilitated as excess funds are made available from the Storm Fund.

Some areas where development is anticipated and sewers will be needed in the near future, and areas already developed which are expected to redevelop and will need supplementary service are:

Core: Plaza de Guadalupe

Core: North of Santa Clara

Industrial: North San Jose Industrial Reserve
Berryessa Industrial Reserve
South San Jose: along Curtner west of Oak Hill
Alum Rock: Mabury Road area
Edenvale Industrial Reserve

Residential: Almaden: along Camden and south to ridge line
Central: existing problem
Edenvale: along Monterey Road
Snell Avenue north of Blossom Hill
Cottle Road north of Santa Teresa
Evergreen: southern and eastern sections
West Valley: Sherwood-O'Brien area
Hamilton-Payne area
Willow Glen: existing problems
Carter Avenue south of Branham
Coyote: no service now
Alviso: need service to build anything substantial

## Conclusions

1. Storm drainage facilities are inadequate or non-existent in some areas of the city.

2. Some deficiencies are being remedied. Others are not, due to insufficient funds.

3. New development will have storm sewer service provided to the extent that the street system is complete.

8. Flood Control

Definition of Service and Identification of Provider

Flooding in Santa Clara County and in San Jose is a relatively common phenomenon. Flood-producing storms have occurred in Santa Clara County every few years as evidenced by historical records and newspaper accounts. Newspaper records describe notable floods in the area during 1862, 1893, 1911, 1919, 1950, 1955, 1958, 1963, and 1969. The December 1955 flood was the worst flood in recent years, covering over 8,300 acres within the County.

Although the area has been fortunate in that these floods have not resulted in loss of life, they are nonetheless a significant problem. The prevention or control of flooding in this flood-prone valley is therefore of significant concern.

The reduction of flood hazards in San Jose and Santa Clara County is the responsibility of the Santa Clara Valley Water District (SCVWD), with some help being provided by the U.S. Soil Conservation Service and the Army Corps of Engineers. The SCVWD is organized under a Board of Directors, composed of seven members, one elected from each of the five County Supervisorial Districts and two at-large members appointed by the County Board of Supervisors. The County is divided into five flood control zones roughly conforming to the boundaries of the major watersheds affecting the Valley Floor. (see illustration I) Property owners in each flood control zone pay taxes which support flood control planning, design, construction and maintenance projects in their particular zone. This system of funding flood improvements within a given zone from taxes generated within that zone creates some imbalance between those areas which generate the greatest tax revenue and those areas of greatest need of flood improvements. At the present time 112 streams in the County have some type of flood control improvement. In addition to the District's staff of approximately 300, the Board of Directors is assisted in making recommendations relative to priorities and financing by five flood control advisory committees, one for each flood control zone.

Levels of Service

A. Optimum service

The criteria used to determine the adequacy of flood control improvements on any one stream is its ability to accommodate what is known as an intermediate regional flood. An intermediate regional flood is defined as a flood

# Flood Control Zones


ILLUSTRATION I

having an average frequency of occurrence of once in 100 years. It must be remembered, however, that although it has an average recurrence interval of 100 years, the flood could actually take place several times in any one flood season or occur numerous times in a decade. Recently, because of environmental concerns and the willingness of affected residents to accept a higher level of flood risk, flood improvements have been made that do not result in a level of service required to accommodate a 100-year flood.

B. Existing service

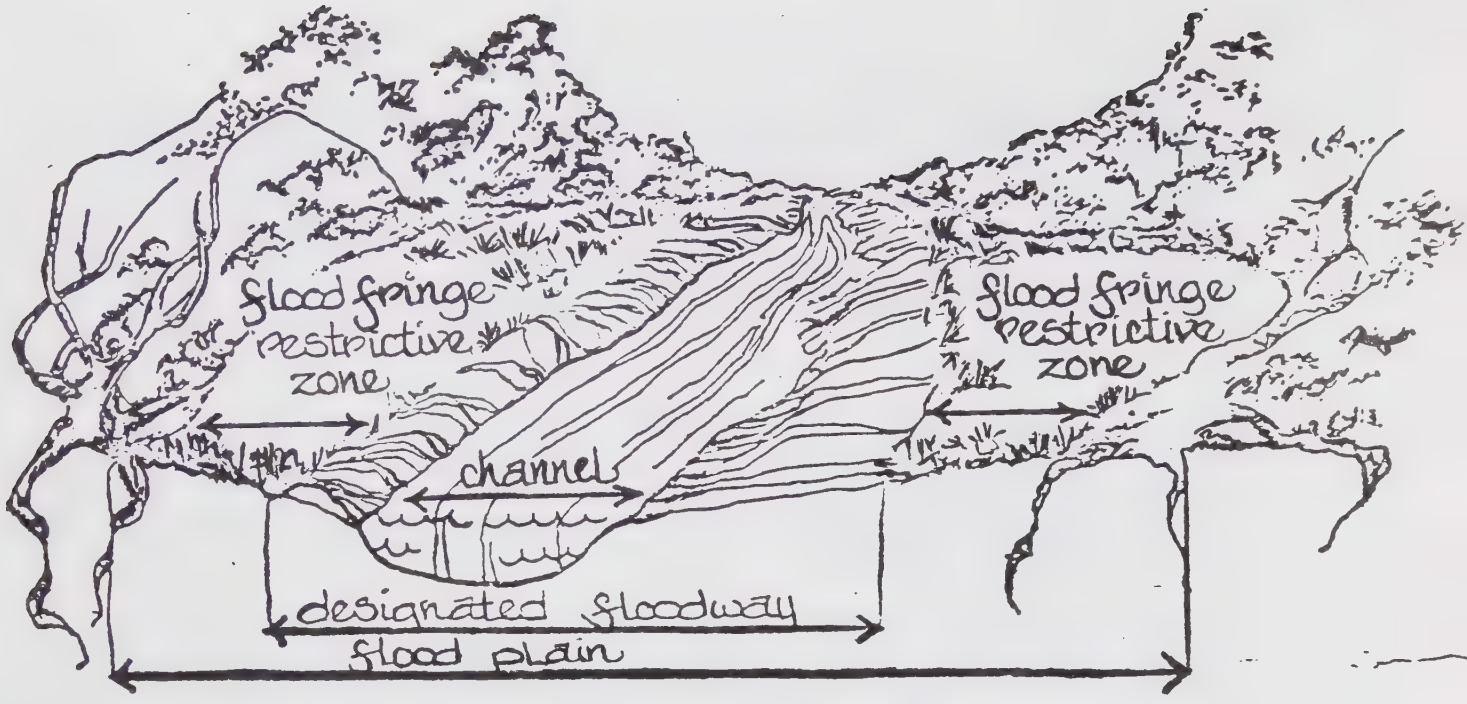
The flood control program of the SCVWD is a continual one of planning, design, construction and maintenance. At the current rate of expenditure, it will take 60 years for the entire program to be completed. Since flood control projects only have an average lifespan of 50 years, the program will never actually be completed.

The primary objective of the flood control program is to save lives and preserve property. Once a flooding problem is identified, the first step is to determine the size of the flood flow. Once the size of the flood flow is known, it is usually possible to define various measures that will provide protection from the flood. These methods might involve anything from improved stream maintenance proposals to channelization of the stream. An analysis is made of the alternative flood protection plans by the District staff and citizens committees from the affected areas, resulting in the development of a Hearing Plan. These plans recommend general solutions to the various problems and are presented to the District Board for adoption at a public hearing. Once a Hearing Plan is adopted, the District can determine what measures are appropriate to implement the Plan. As funds become available, a project goes into a design phase where the specific details are worked out. After completion of the design work and the acquisition of the required right-of-way is completed, construction normally begins. In areas where development is sparse the District prefers to preserve the entire floodplain area both for economic and environmental reasons. Another preferred approach is the use of a modified floodplain (see illustration 2). Lining a channel with concrete is the most expensive and least desirable approach to flood control, but it may be the only option available in areas of extensive development.

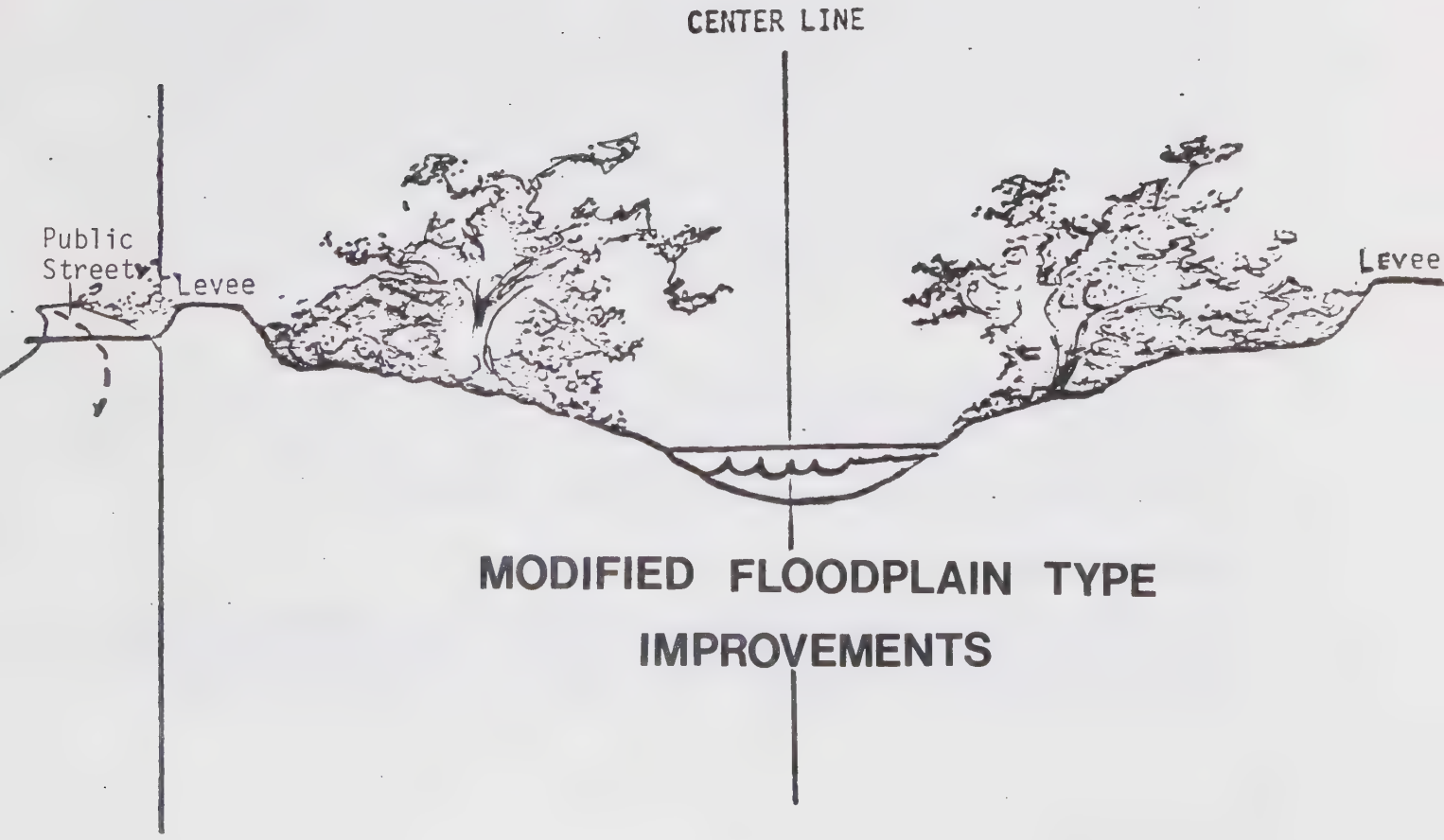
At the present time, the District seems to be concentrating its efforts in the east zone which lies primarily within San Jose's jurisdiction. Work is now beginning on flood control improvements along Silver Creek which at the present time poses one of the worst flood hazards in the County. The Silver Creek project is estimated to take 15 years to complete.

Remedial Actions

Creek and river channels are normally formed by the average annual high water, and generally do not have the capacity to carry the volumes of water generated during an intermediate regional flood (100-year flood) or even smaller, more




**NATURAL STREAM**




**MODIFIED FLOODPLAIN TYPE IMPROVEMENTS**

ILLUSTRATION II

common floods. The larger floods often form floodplains and the occasional inundation of these areas is a natural and necessary phase of their formation. Since World War II, San Jose and Santa Clara County have undergone a period of extremely rapid population growth. Industrial and commercial buildings as well as housing tracts have been built in areas that once were farmland and many of these structures have been built in floodplain areas. In addition to intense urban development which has reduced the amount of permeable soil, increased the runoff into streams and filled in floodplains, many bridges and other obstructions to water flow have been constructed that serve to increase the likelihood of flooding and the amount of damage that a flood is likely to cause.

As long as the cities and the county continue to allow development in floodplain areas the amount of flooding and the cost of improvements to prevent flooding will continue to increase. SCVWD Planners feel that keeping housing developments and other forms of intensive development out of floodable areas is the best way to protect people from floods. Floodplains should only be used for open space, recreation, agriculture or similar purposes.

Besides flooding from streams, there is also a flood problem in the Baylands area (Alviso) caused by a combination of inadequate channel capacity for the Guadalupe River and Coyote Creek and subsidence of the land in the area. In the event of a 100-year flood occurring at the same time as a period of high tides, levees which have been lowered due to land subsidence could be breeched, with extremely serious consequences for developed Bayland areas. It is anticipated that areas such as Alviso might remain under seven or eight feet of water for a considerable period of time.

Constructing flood control projects is not the only means of reducing the economic and environmental effects of flooding. Flood insurance can also be a way of protecting property against damage from floods and the Federal Flood Insurance Program is the subject of another section of this report. The potential for flooding should also be an important factor in determining the inherent land suitability of a particular site for a particular use.

Conclusions

1. Many streams in Santa Clara County have a history of flooding and unless improved to the extent that they can contain the 100-year flood, can be expected to overflow their banks in the future.

2. It will take approximately 60 years for the SCVWD to provide 100-year flood protection for all areas of the County.

3. The actions of cities in approving developments in floodplain areas and in constructing projects that restrict stream flows aggravates the flood potential and raises the level of potential damage.

4. Wherever possible floodplains should be kept free of development for safety, economic, and environmental reasons.

5. The Santa Clara Valley Water District is responsible for providing flood protection and will take whatever action it deems necessary to minimize flooding hazards including concrete channelization if no other options are available. It is up to the cities to insure that other more desirable options are available.

9. Libraries

Definition of Service and Identification of Providers

The primary functions of the San Jose Public Library are the provision of book circulation and reference services to the City's residents. In addition, it makes available other material such as magazines, art prints, sheet music, phonograph recordings, films, and special books for the handicapped. The library also directs various outreach programs to hospitals, senior groups, shut-ins, etc.

The City's present physical facilities are the Main Library downtown, twelve branches throughout the City and one bookmobile or mobile branch. (See Chart 1) Three additional branch libraries are scheduled to open within the next three years. Bookstock distribution is also shown in Chart No. 1. Circulation of books, which is the most obvious measure of service, is shown in Chart No. 2. However, it should be pointed out that the library provides a great many services which do not so readily lend themselves to quantification nor do these statistics measure the quality of the service which results in individual satisfaction to library users of all ages.

Library service is provided not only by the City's own facilities, but is supplemented through several cooperative agreements with other jurisdictions. These are:

Camino Real Library System is composed of the San Jose, Santa Clara and Sunnyvale Libraries.

Santa Clara Valley Library System is composed of Mountain View Public Library and Santa Clara County Free Library with branches at Cupertino, Saratoga, Milpitas, Morgan Hill, Gilroy, Los Altos, Alum Rock, Campbell and 3 bookmobiles.

Note: Effective July 1, 1975 the above two library systems will combine to become the South Bay Cooperative Library System. This will have the effect of providing free library services on a reciprocal basis to all residents of Santa Clara Valley except Palo Alto and Los Gatos which have chosen to remain outside of the system.

Joint Systems South Bay Area Reference Network (SBARN) is a cooperative effort of the Camino Real and Santa Clara Valley Library Systems. Under this program the Area Library (Main Library, San Jose) provides reference aid to community libraries through its communications ties with the Bay Area Reference Center (San Francisco Public Library) and

SAN JOSE PUBLIC LIBRARY

LIBRARY FACILITIES AND BOOK STOCK

June 30, 1974

| FACILITY | LOCATION | TOTAL AREA (Sq.Ft.) | BUILDING AREA | BOOK STOCK |
|---|---|---|---|---|
| Main Library | 180 W. San Carlos | 120,646 | 116,393 | 262,624 |
| Almaden Branch | 6455 Camden Avenue | 79,553 | 9,860 | 34,419 |
| Alviso Branch | 1060 Taylor (Alviso) | 10,800 | 931 | 1,566 |
| Berryessa Branch | 3311 Noble Avenue | 59,823 | 8,689 | 36,752 |
| Bookmobile | | N/A | N/A | 11,875 |
| Calabazas Branch | 1320 S. Blaney Avenue | 37,950 | 5,680 | 42,905 |
| Cambrian Branch | 1780 Hillsdale Avenue | 35,182 | 6,650 | 54,506 |
| East Branch | 1102 E. Santa Clara St. | 5,100 | 3,618 | 26,738 |
| Hillview Branch | 225 Ocala Avenue | 43,560 | 7,108 | 34,994 |
| Pearl Avenue Branch | 4275 Pearl Avenue | 39,996 | 6,895 | 22,752 |
| Rosegarden Branch | 1580 Naglee Avenue | 24,505 | 7,396 | 41,821 |
| Seventrees Branch | 3597 Cas Drive | 43,260 | 6,650 | 33,320 |
| West Valley Branch | 1243 San Tomas Aquino Road | 43,885 | 7,168 | 53,451 |
| Willow Glen Branch | 1157 Minnesota Avenue | 28,777 | 5,412 | 40,942 |
| TOTAL | | 573,037 | 192,450 | 698,665 |

SOURCE: Book stock figures as reported in the Consolidated Librarians Report for June 30, 1974.

SAN JOSE PUBLIC LIBRARY

LIBRARY BOOK CIRCULATION BY FACILITY

AS OF JUNE 30, 1974

| FACILITY | LOCATION | CIRCULATION | PERCENT |
|---|---|---|---|
| Main Branch | 180 West San Carlos | 576,633 | 23.9 |
| Almaden Branch | 6455 Camden Avenue | 160,719 | 6.7 |
| Alviso Branch | 1060 Taylor (Alviso) | 5,275 | 0.2 |
| Berryessa Branch | 3311 Noble Avenue | 148,325 | 6.1 |
| Calabazas Branch | 1320 S. Blaney Avenue | 183,260 | 7.6 |
| Cambrian Branch | 1780 Hillsdale Avenue | 305,210 | 12.6 |
| East Branch | 1102 E. Santa Clara St. | 49,005 | 2.0 |
| Hillview Branch | 225 Ocala Avenue | 115,060 | 4.8 |
| Pearl Avenue Branch | 4275 Pearl Avenue | 170,606 | 7.1 |
| Rosegarden Branch | 1580 Naglee Avenue | 103,560 | 4.7 |
| Seventrees Branch | 3597 Cas Drive | 142,182 | 5.9 |
| West Valley Branch | 1243 San Tomas Aquino Road | 245,670 | 10.2 |
| Willow Glen Branch | 1157 Minnesota Avenue | 144,599 | 6.0 |
| Bookmobile | | 54,111 | 2.2 |
| | TOTAL | 2,404,215 | 100.0% |

the State Library. Telephone, teletype, telefacsimile transmission and messenger service are all used.

Joint Systems Reading for Everyone to Achieve and Develop (READ) is again composed of the Camino Real and Santa Clara Valley Library Systems. Its purpose is to deliver services and materials to those with low reading skills. SBARN and READ are funded from federal grants.

Cable Television Outreach Project is a State Library funded project designed to explore potential library uses of cable television technology. The project is experimenting with television formats and is currently producing a weekly Videotaped program "This Weekend", which provides information of cultural events in the San Jose area.

Level of Service

A. Optimum service

The Public Library has established standards or operating objectives, which it would like to achieve in the provision of library services. These are generally consistent with national standards established by the American Library Association in Minimum Standards for Public Library Systems, 1966. These include:

1. Minimum number of books in collection equal to two books per capita.
2. 5% of total collection to be selectively removed each year to adjust for obsolescence, destruction and theft.
3. Periodical holdings equal to one currently published title for each 250 people in the city.

The usual service area for a branch library in San Jose is considered to be a geographical area containing 50,000 people. Under normal conditions this means that no resident should be more than two miles from a library.

There are additional standards which are less direct in their effect on library users, and less meaningful as a measure of the adequacy of library service. These cover a wide range of procedures, such as the time desired for repairing books, reshelving books after they are returned, overdue notices mailed, and others.

B. Existing service

Using data as of June 1974, it was determined that the Public Library does not meet the standard of 2.0 books per capita but rather has only 1.31 books per capita. Periodical holdings equal one currently published title for each 236.7 people in the city. (See Chart 3)

As San Jose has twelve branch libraries and three more scheduled for

# Service level review summary

| ACTIVITY: | Management | Administrative Services | Technical Services | Main Library Services | Extension Services |
|---|---|---|---|---|---|
| COST CENTERS: | 07201 | 07202 | 07203 | 07230 - 07234 | 07250 - 07266 |
| OPERATIONAL OBJECTIVES: | 1. 2 books per capita City population.<br>2. 1 periodical title per 250 residents. | N/A | 1. Book & material orders prepared within 2 weeks of request.<br>2. Receiving & expenditure documents completed within 2 weeks after delivery.<br>3. All cataloguing tasks completed in 6 days.<br>4. All processing tasks done in 2 days.<br>5. Items mended in 1 week. | 1. 5% of main collection weeded annually.<br>2. Returned materials shelved in 1 day.<br>3. Overdue notices sent 12 days after due date.<br>4. Library cards mailed 2 days after application.<br>5. When available, reserved materials located & patron notified in maximum of 2 days.<br>6. All new catalogue cards filed in 1 day.<br>7. Children's story hours should not exceed 35 attendees.<br>8. All available back periodicals requested obtained within 5 minutes.<br>9. One film program per week offered at Main Library. | 1. All materials routed to Main reserve within 1 day of request.<br>2. Patrons wait maximum of 2 weeks for reserved materials.<br>3. 5% of branch collections weeded annually.<br>4. Children's story hours should not exceed 35 attendees.<br>5. One school-age and one pre-school age story hour per week offered at each branch.<br>6. One film program per week offered at each branch. |
| EXISTING SERVICE LEVELS: (1973-74) | 1. 1.31 books per capita.<br>2. 1 periodical title per 236.7 residents. | N/A | 1. Orders take over 1 month.<br>2. Receiving & expenditure documents completed in 2 - 3 months.<br>3. Cataloging backlogs estimated at 2½ to 5 months.<br>4. Processing backlog estimated at 4 - 6 weeks.<br>5. Items mended in 2 - 3 weeks. | 1. 1% - 2% of Main collection weeded annually.<br>2. 50% of returned materials shelved in 1 day.<br>3. 100% overdue notices sent in 12 days.<br>4. Library cards mailed 5 - 10 days after application.<br>5. 80% of available material obtained within 2 days. Average for obtaining all reserve materials requested is 2 - 4 weeks.<br>6. 70% of new catalogue cards filed in 1 day.<br>7. All pre-school story hours now exceed 35 attendees.<br>8. 50% of available periodicals obtained within 5 minutes.<br>9. Two scheduled film programs per year now offered at Main Library. | 1. 80% of materials routed to Main reserve in 1 day.<br>2. Reserve items obtained not counted in branch libraries.<br>3. 1% - 2% of branch collections weeded annually.<br>4. Pre-school story hours generally exceed 35 attendees.<br>5. 7 branches offer weekly school-age story hours; all branches except Alviso station offer weekly pre-school age story hours.<br>6. Two branches offer weekly film programs; a third branch offers bi-weekly programs. |
| 1974-75 RESOURCES* | Positions: 7.5<br>Cost: $140,000 | Positions: 15.5<br>Cost: $255,000 | Positions: 25.7<br>Cost: $308,000 | Positions: 69.7<br>Cost: $809,000 | Positions: 64.9<br>Cost: $754,000 |

TOTAL RESOURCES: POSITIONS: 183.3
COST: $2,286,000



Chart 3

completion before 1980, it would appear that the standard of one branch per 50,000 people is met. However, every resident is not within a two mile radius from a library. At present, branches are located in natural population centers which are readily accessible to vehicular and pedestrian traffic. While prior CIP's have carried a large branch proposed for a city-owned site at Blossom Hill and Cottle Roads, to serve residents between Monterey Highway on the east and the hills southwest of Santa Teresa Blvd., funding will not be available until sometime after 1980. This is the largest area in the City which is served presently only by limited bookmobile service.

An interim method for serving those residents for whom a library is not conveniently located is use of a bookmobile. This service is scheduled to arrive at a predetermined stop at two-week intervals. The stops are chosen by staff according to demand, based on availability of a library and on population. The schedule is reviewed at six-month intervals to consider different needs due to such factors as new development and the amount of activity at scheduled stops.

Remedial Actions

Several library facilities are either under construction or funded in the current 5-year Capital Improvement Program. A new facility on the Eastside is being built by East Side Union High School District as part of its Educational Park. That library will be staffed and operated by the City as a public library. It will serve both as a local branch and as an area reference center for all Eastside public libraries.

Construction of a branch library in Evergreen will take place in 1975. Books are being purchased for both of the above libraries.

Two additional facilities are funded in the Capital Improvement Program. The first is the expansion of the Cambrian Branch, programmed for 1979-80. This library is now the busiest branch and has outgrown its present structure. The second funded project is the construction of a branch in the Northside Neighborhood. This is the first phase in the replacement of the old East Branch. Funds to complete the replacement by the erection of a small new branch in the Olinder Neighborhood are proposed by Project '75. Also endorsed for Project '75 is expansion of the West Valley Branch.

Money for book acquisitions are provided by Construction/Conveyance Tax Funds. Currently this income is about enough to keep pace with obsolescence, destruction and thefts. Additional funds are being sought through the bond process and received high citizen endorsement.

The bookmobile serves many areas where no library now exists. Generally this is in new growth sections of San Jose, such as Berryessa, Evergreen and Edenvale. Some stops in Alum Rock and Evergreen Planning Areas will be eliminated when new branches have been completed. Plans are being made to extend the hours of service if adequate staffing can be provided. Currently, the bookmobile operates 4½ days per week with ½ day for maintenance. It is

hoped to add Saturday service, as well as two evenings. Schedules are publicized through schools, libraries, newspapers and the Welcome Wagon.

Provision for Additional Growth

Additional residential development will create demand for library system expansion. Funds for the library structures themselves and for books and equipment are generated through the Construction/Conveyance Tax. The level of funds available is not generally sufficient to provide the service needed. This is especially the case where the development is scattered throughout various planning areas as most of the money must be spent in the area from which it came. If the Projects '75 library bond program passes, enough funds will be available to provide a book stock to meet minimum City standards relative to projected 1980 population.

Conclusions

1. San Jose does not have an adequate stock of books at present.

2. Although according to the standard of one branch library per 50,000 population the City is adequately served, due to the extreme geographic dispersion of the City's population, many people are more than two miles distant from the nearest library.

3. The additional library branches programmed, if built, will provide better service within the Urban Service Area but there will still be areas too distant from the nearest library. These include parts of Berryessa, Edenvale and Evergreen. Development outside the Urban Service Area will not have reasonable accessibility to library services.

4. Even though new book purchases are funded, and will reduce the existing deficiency, continued development will increase the need for additional books.

5. Passage of the Projects '75 library bond program will make available funds which are expected to be sufficient to raise the total system book stock to a minimum standard level by 1981.

10. Police

Definition of Service and Identification of Provider

The Police Department is organized into four bureaus, the largest being Field Operations which utilized 56% of the Department's manpower. Police patrol and answering calls for service are the major of this bureau. Other activities performed within the Department include criminal investigations, traffic enforcement, storing and receiving evidence, recovering lost and stolen property, etc.

# SAN JOSE POLICE BEAT DISTRICT MAP

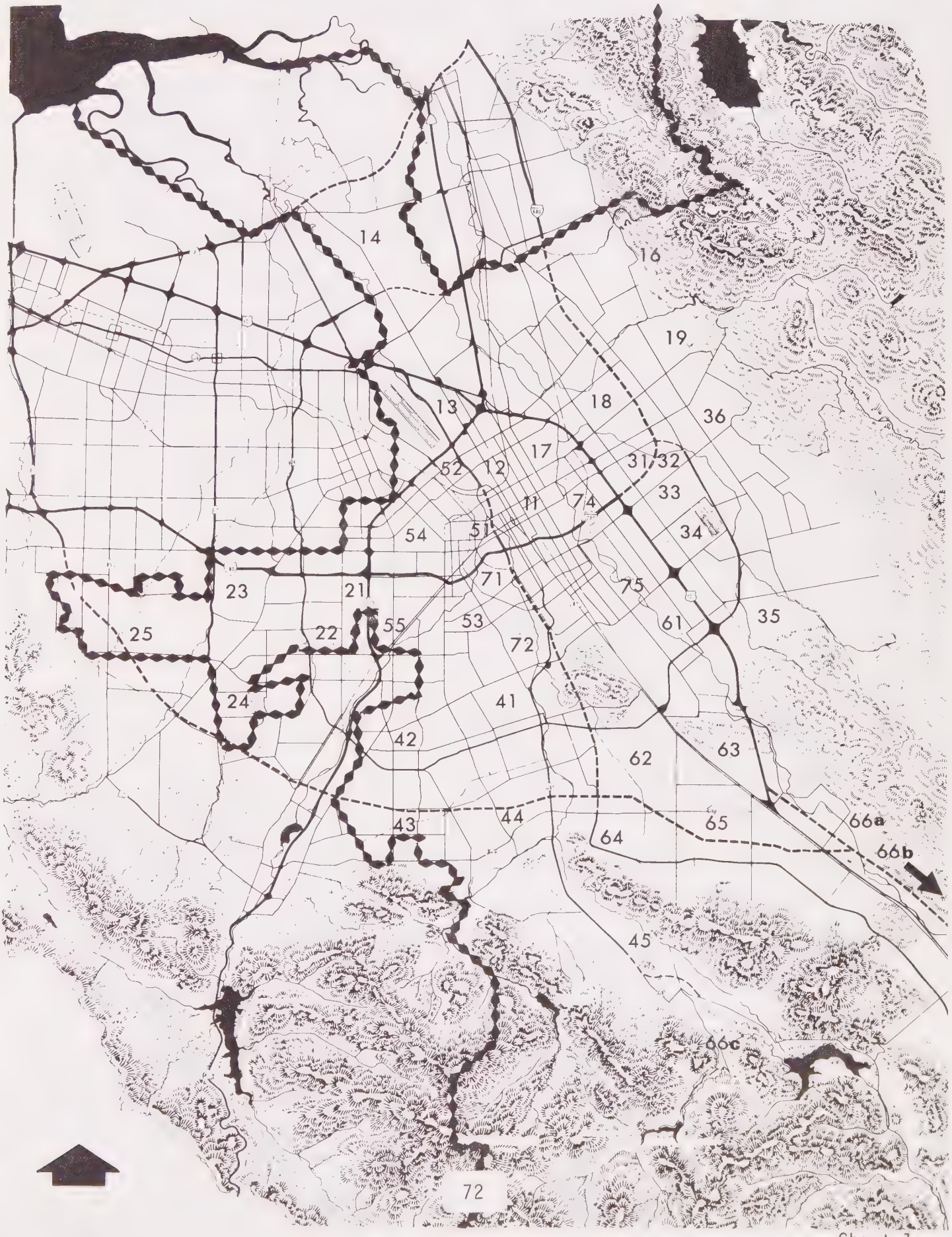



Chart 1

For police patrol purposes the city has been divided into seven geographical subdivisions called districts. A team, headed by a Police Sergeant, performs services within these districts. They are further subdivided into a total of forty beats which include all areas inside the city limits.

At this time no cooperative agreement for providing police service exists between the San Jose Police Department and the County Sheriff's Office. Calls for service made to the incorrect agency are referred to the proper jurisdiction. One exception to this procedure is calls reported as "in-progress" crimes. In these cases, the caller is kept connected while a special direct line is used to transfer the call. Certain locations exist where the jurisdiction is difficult to ascertain. In such cases, the City Police will respond to calls for immediate service.

Levels of Service

A. Optimum service

Operational objectives have been established for the Police Patrol unit by the Department using standards developed from both the National Crime Commission Police Task Force Report and departmental experience. These are:

| Work Element | Operational Objectives |
|---|---|
| Calls for Service | Respond to all in-progress calls within five minutes of receipt. |
| | Objective Basis: Departmental experience |
| | Respond to all routine calls within fifteen minutes of receipt. |
| | Objective Basis: As above |
| Preventive Patrol | Provide a minimum of 33% of total available patrol time for preventive patrol. |
| | Objective Basis: National Crime Commission's Police Task Force Report standard |
| Self-initiated | Provide a minimum of 20% of total available on-duty time for activity administration. |
| | Objective Basis: Departmental experience |
| Activity Administration | Provide a maximum of 15% of total available on-duty time for activity administration. |
| | Objective Basis: Departmental experience |

## POLICE PATROL SUMMARY

**ACTIVITY:**

**PATROL:** Patrol in marked police cars and on foot is conducted to suppress crime and to enforce Federal, State and local statutes. Reports of crimes and accidents are prepared. Preliminary investigation of crime scenes are conducted. Related services are provided, such as courtesy assists and referrals. This activity is performed by three divisions of the Bureau of Field Operations on three overlapping 10-hour shifts, seven days per week, assigned on the basis of 34 beat areas comprising six districts.

| WORK ELEMENTS: | CALLS FOR SERVICE | PREVENTIVE PATROL | SELF-INITIATED | ACTIVITY ADMINISTRATION | TRAINING |
|---|---|---|---|---|---|
| | Requests for police service are received from Communications which may be of an in-progress or routine nature. The officer is notified by radio, travels to the scene, may request fill units, takes action, resolves the situation, gathers information for reports, may collect evidence or property, may make arrests, and returns to service. This work element includes booking, processing, and hospital wait time. | Random coverage is provided within beat areas by recognizable police vehicles or foot patrols to prevent crime and create an environment of security. Door and window checks are made. | Activities such as field interviews, traffic warnings, and temporary traffic control not directed by Communications are performed. Also includes investigation, booking, processing, and hospital wait time. | Activities are performed which are necessary to prepare for patrol duties and those tasks which are required as a result of patrol activity. Includes vehicle and equipment checkout, roll call, report writing on-duty court appearances, lunch breaks, and meetings with the Sergeant on the beat. | Refresher or in-service training programs are conducted in law enforcement methods and techniques. Includes roll call training, range training, tactical squad exercises, canine training, and attendance at POST certified courses. |
| OPERATIONAL OBJECTIVES: | In-Progress - 5 minutes<br>Routine - 15 minutes | 33% Officer Time | 20% Officer Time | 15% Officer Time | 5% Officer Time |
| EXISTING SERVICE LEVEL: | In-Progress - 9 minutes<br>Routine - 46 minutes | 29% Officer Time | 16% Officer Time | 15% Officer Time | 2% Officer Time |

| Work Element (continued) | Operational Objectives (continued) |
|---|---|
| Training | Achieve and maintain an average of 5% (30 minutes) per 10-hour shift per officer for training activities.<br><br>Objective Basis: Departmental experience |

Objectives were also developed for other police activities. However, these are less directly related to service provided to residents.

B. Existing service

A study was made to determine present service levels (as of February, 1974). A comparison of objectives and existing service level is shown on Chart 2. The major indicator of service is response time which is seen to be inadequate with respect to established working standard.

| Calls for Service | Existing Service Level | Operational Objective |
|---|---|---|
| In-progress | 9 minutes | 5 minutes |
| Routine | 46 minutes | 15 minutes |

These deficiencies, however, cannot be related to specific locations. Increased demand for service in one district is met by redistribution of staff throughout the system so all areas are served at approximately the same level. This is done every four months. Since the same number of staff is serving a greater demand, performance throughout the entire city is reduced. Besides increasing population, the demand for service has been effected by rising crime rates. In San Jose, these have risen by an annual average of 15.2% for the years 1968-72.

Remedial Action

The City Council has recognized the problem of increased demand and has raised the number of authorized positions from 691.5 to 843 over the period of March, 1972 to November, 1974. The Police Department now comprises 25% of the total city budget.

Since the Service Level Review, limited study has been made to determine whether changes instituted after the Review have resulted in improved service. An improvement of 10% in response time has been noted. As a number of remedial measures were taken at the same time, it is difficult to pinpoint which were the more effective. Some of these include a new report writing system, redistricting the city along with an increased number of beats and district commander ch anges. Recently, a policy of citing minor drug offenders was enacted. This is expected to release additional time for other police patrol activities.

Further actions are anticipated. In December, the Computer Aided Public

Safety (CAP) program will begin. This system will assist by locating crimes, enabling faster dispatch time. Statistics on types and location of criminal activity will be updated continuously. Previous plans to remove the Police Department from Central Switchboard have been shelved until such time as the Simplex system is utilized by all city offices. In addition, state law requiresthat by 1985, the "911" emergency number be used throughout the state.

Provision for Additional Growth

Demand for additional police service must be met with both increased manpower and equipment. There are now 1.57 police positions for every 1,000 residents. In order to maintain the existing service level, this many positions would have to be authorized for each 1,000 increase in population; .66 of these would be in police patrol work. Equipment to supply this personnel would also be necessary and would include such items as police cars and radios, safety equipment and office supplies. Administrative changes would also be necessary. As growth occurs, districts and beats would be redrawn to more uniformly represent population demand.

Conclusions

1. All of incorporated San Jose has police service.

2. Quality, rather than quantity, is the standard by which police service can be judged.

3. Problem areas cannot be pinpointed as increased demand in one location is met by redistribution of staff and equipment.

4. The citywide service level is below the operational objectives of the Police Department.

5. Increase in demand will result in lowered level of service throughout the city.

6. In order to maintain existing service levels, personnel and equipment must be funded as additional growth occurs.

7. Development away from existing built up areas are more difficult and costly to serve, and further reduce service levels.

## 11. Fire

Definition of Service and Identification of Provider

The basic functions of the Fire Department are fire suppression and fire prevention. The City presently has twenty-five fire stations in addition to a training center, maintenance facility and administrative building. Both permanent and temporary fire stations are used in residential areas in order to provide service more flexibly. Of the total, six are temporary. The

| | STATION No. & LOCATION |
|---|---|
| **DISTRICT I** | |
| 5 | 1380 North Tenth Street (Dist. Hq.) |
| 1 | 201 North Market Street |
| 2 | 304 North Sixth Street |
| 19 | 1025 Piedmont Road |
| 20 | 1433 Airport Boulevard |
| 23 | 1771 Via Cinco de Mayo |
| 25 | 4758 Gold Street, Alviso |
| | SUBTOTAL |
| **DISTRICT II** | |
| 3 | 98 Martha Street (Dist. Hq.) |
| 4 | 454 Auzerais |
| 8 | 802 East Santa Clara Street |
| 16 | 2001 South King Road |
| 21 | 1749 Mt. Pleasant Road |
| | SUBTOTAL |
| **DISTRICT III** | |
| 10 | 511 South Monroe Street (Dist. Hq.) |
| 6 | 1386 Cherry Avenue |
| 7 | 800 Emory Street |
| 9 | 3410 Ross Avenue |
| 14 | 1201 San Tomas Aquino Road |
| 15 | 1248 Blaney Road |
| | SUBTOTAL |
| **DISTRICT IV** | |
| 13 | 4380 Pearl Avenue (Dist. Hq.) |
| 12 | 502 Calero Avenue |
| 17 | 1494 Ridgewood Drive |
| 18 | 4430 South Monterey Road |
| 22 | 6461 Bose Lane |
| 24 | 2525 Aborn Road |
| 27 | 239 Bernal Road |
| | SUBTOTAL |
| | TOTAL |

manpower authorized to provide fire service consists of 595 full-time positions, of which 519 are directly involved in fire suppression.

While the City has the responsibility of providing service to all parts of incorporated San Jose, it does not rely solely on its own manpower and equipment. Because of the haphazard pattern of development with interspersed pockets of county land, providing service is difficult. For this reason, the City has entered into an automatic aid agreement with Central Fire District and with Campbell, Milpitas, Santa Clara and State Forestry. In each case, resources from the nearest fire station are dispatched to an ongoing fire. If it is a structural fire in an automatic aid area, the responsible jurisdiction responds and the other jurisdiction sends one company for backup. The county has either 2 or 3 firefighters assigned to a vehicle. The City has 4 or 5. It is felt that in cases of structural fires, the difference in manpower could have a significant effect. This same reason is used to justify the need for a city fire station where a county station already exists; for example, in the Burbank area.

Four wildland areas have been annexed to San Jose and are under the protection of the State Division of Forestry. The City contracts for this service due to the relative remoteness of the areas and due to the fact that the State is serving all the surrounding county wildlands. The current rate is $1.42 per acre, the average statewide cost for wildland protection. This cost is approximately one-half of the City's share of property tax revenue from these properties. Fifty employees are permanently stationed in Santa Clara County. During the summer this number substantially increases. Both aerial means and large ground crews are used to fight wildland fires. If needed, emergency manpower is available from the State Department of Corrections labor camps.

Levels of Service

A. Optimum service

There are several criteria for considering adequacy of fire service: (1) average response time to a fire, (2) distance of urbanized areas to a fire station, (3) number of stations per increment population and (4) Insurance Service Office (I.S.O.) rating. All of these are interrelated and point to the fact that adequacy of fire service is not a question of whether an area is served, for all areas of San Jose have service, but how well it is served.

The Insurance Service Office rating is a means of classifying municipalities with reference to their fire defenses and physical conditions. Standards have been established in four categories: water supply, fire department, fire service communications and fire safety. For each deviation from the standards, deficiency points are assigned, the number depending on the importance of the item and the degree of deviation. The total number of deficiency points charged against a municipality determines its relative classification, which is used in the assignment of fire insurance rates.

Operational objectives have been defined by the Fire Department generally

based on ISO standards. Of most concern to the majority of citizens are those dealing with fire incident response. The desirable response time for the first due fire company is 3, 4 or 5 minutes based on the life hazard.

B. Existing service

The City of San Jose currently has an ISO rating of 3A, indicating an above average level of fire service. The Fire Department itself has a rating of 2, or very good. This is based on such factors as communications systems and manpower training programs.

The existing average response time for all companies responding to fires is 3.83 minutes, fairly close to the objective. This number is a citywide average and certain areas have a greater time, in some cases over 5 minutes, due to distance from a fire station and/or traffic conditions. These areas have been identified as at least the following:

| | |
|---|---|
| Alum Rock | (1) area of east Alum Rock Avenue |
| | (2) King and Mabury industrial area |
| Central | (1) parts of Burbank |
| Edenvale/Pioneer | (1) area between stations 12 and 17 (around Blossom Hill and Almaden) |
| | (2) around Blossom Hill and Cottle Road |
| Evergreen | (1) the Villages area |
| North San Jose | (1) Kruse and Trimble Road |
| South San Jose | (1) area of Senter and Tully Roads |
| West Valley | (1) area between Stations 14 and 15 (Central parts of West Valley) |
| | (2) area West of Station 15 |

Also see Chart 4.

The areas in the Eastside are considered the higher priority by the Fire Department for improvements.

Remedial Actions

Only one fire station has funding in the 1975-80 Capital Improvement Program. This Evergreen station directly responds to a previously identified deficiency.

Evergreen: Station 11, at San Felipe and Yerba Buena Roads will serve the new Community College and the Villages as well as any new development in the area. This will be a temporary structure.

Three stations are included in the Projects '75 bond program: #28 in Alum Rock, #35 in South San Jose and #34 in Alum Rock. The latter two would remedy existing inadequacies.

Future distribution of resources will be decided based on recommendations from an in-progress study being conducted by the Fire Department in conjunction with Public Technology, Inc. The PTI study is addressing present

# EXISTING & FUNDED FIRE STATION WITH DEFICIENT SERVICE AREAS


Areas of Deficient Service

Existing City Fire Stations

Funded in 1975 - 80 C.I.P.

distribution of resources, possible alternatives, and identification of optimum locations for future resources to maximize the effectiveness of fire suppression efforts.

Data on fire incidence has been collected for several years as part of the Uniform Fire Incident Reporting System (UFIRS). Useful applications of this information are being constantly developed to assist in management decision-making. The Fire Department has recently developed the Fire Inspection Reporting System (FIRES) which is designed to provide a master address file, automatically schedule anniversary and follow-up inspections, and provide data on inspection activities. Both FIRES and UFIRS data will eventually be collected and analyzed by census tract to establish the relationship of prevention and suppression efforts.

One attempt to increase the level of fire service is already underway. Fire-fighting personnel rather than fire prevention personnel are being used to inspect certain types of occupancies, including apartment houses, hotels and schools. Continued and increasing use of suppression staff is intended to supplement prevention staff where operational objectives are not met due to inadequate numbers of prevention staff.

Provisions for Additional Growth

New development would affect fire service in a variety of ways. Growth outside areas now developed would require additional facilities, personnel and equipment in order to maintain existing service levels as they would be farther than two miles from an existing facility. One example of such an area would be that portion of Evergreen south of the Villages. Any development in the Urban Reserve would also require fire facilities. The question is not whether an area will receive fire service, for all of San Jose does and will continue to, but rather what level of service will be provided.

Fire stations are funded from accumulated Construction/Conveyance Tax monies. However, there may not be enough revenue generated in a particular planning area to meet the costs of increased growth. A further negative effect could be greater traffic levels, which could increase response times to certain sections of San Jose.

Conclusions

1. The overall service level of the Fire Department is fairly good.

2. There are particular areas of San Jose which are significantly below the standard.

3. Only one station is funded in the 1975-80 CIP, three others will be built if the bond program passes.

4. Additional growth will create the demand for new facilities.

5. Fire service will be provided to all parts of San Jose. Quality not quantity is the relevant measure of this service.

## 12. Parks and Recreation

### Identification of Service and Provider

The Parks and Recreation Department is organized to provide services and facilities for the educational and recreational benefit of all residents. The Parks Division is mainly responsible for grounds maintenance of all City owned and/or leased park and recreation facilities, as well as other City property such as libraries, community centers, the Civic Center, etc. The Recreation Division conducts programs at most developed park and school sites including special programs for the handicapped, senior citizens, and others, and coordinates classes and community use of public facilities. The Parks Planning Section plans the location and phasing of park purchases and development.

The San Jose Parks Department is attempting to work in close cooperation with the Santa Clara Valley Water District in order to develop creek park chains so that both recreation and flood control needs are met. Joint planning, development and use of neighborhood park/school facilities is also pursued by the Parks Department. The City in some instances installs recreational facilities on schoolground property, with the school district providing maintenance of the facilities. Parks facilities for residents of San Jose are also provided by Santa Clara County, which plans and develops parks of a regional nature.

### Levels of Service

A. Optimum service

To obtain some measure of the adequacy of the City's provision of park land, the Parks Department has for several years referred to the standards of the National Recreation Association and has given them more or less "official" status by virtue of their defining the level of service to be achieved with Construction and Conveyance tax monies.

These standards are as follows:

Neighborhood Parks

- ideally 8 acres; 3-5 acres as a minimum
- should serve a neighborhood, or approximately 4,000-6,000 people
- no family should be more than ½ mile away, the service radius of an elementary school

This generally translates as 1.5 acres per 1,000 population assuming 1.0 acre per 1,000 provided by elementary school playgrounds

District Parks

- ideally 30 acres, with 10 acres as a minimum
- should serve 4-5 neighborhoods, or 16,000-30,000 people
- service radius of 1½ miles, the radius of secondary school attendance

This generally translates as 1.5 acres per 1,000 population assuming .5 acres per 1,000 provided by junior or senior high school physical education area

Citywide Park

- 5 acres per 1,000 population

These standards are for full development of the park area including any special equipment or facilities. However, since development to Phase I allows use of the area by the public, parks at this level will be considered developed for our purposes. Phase I development includes grading, drainage, irrigation, trees, turf, restrooms and street improvements.

Parks Division has established operational objectives based on the number of man hours required for a minimum level of maintenance. Recreation Division objectives are an attempt to meet 100% of need expressed in terms of requests, or to meet a percentage of operating costs through user fees.

B. Existing service

The City presently has 331.34 acres of neighborhood park land improved to at least Phase I development. This gives a current level of .62 acres per thousand population, a figure far below the City's standard. The only area of San Jose in which this standard is met is Alviso, with one park of 7.49 acres or 5.76 acres per thousand residents. There are no neighborhood parks in Coyote and North San Jose. The remainder of the planning areas have between .4 to .7 acres per thousand of neighborhood park land.

Developed district parks total 113.00 acres or .21 acres per thousand. Only four planning areas have district parks contained therein. These are Alum Rock (Hillview), Central (Bramhall, Watson, William Street), South (Solari), and West Valley (Calabazas).

In addition to neighborhood and district parks, there are approximately 1470 acres of school playgrounds. This amounts to 2.75 acres per thousand, a figure above that required to supplement the neighborhood and district park acreage.

San Jose has 1057.30 acres of developed citywide parks or 1.98 acres per thousand population; 700.11 acres of this land is in Alum Rock Park. Other citywide parks are Claitor, Kelley and Senter Parks, all part of the Coyote Creek Chain in South San Jose.

A comparison of present developed acreage to the desirable standard shows major deficiencies in all categories.

| Facility/Service | Present Level | Desirable Level |
|---|---|---|
| Neighborhood Parks | .62 | 1.5 |
| District Parks | .21 | 1.5 |
| Citywide Parks | 1.98 | 5.0 |
| | 2.81 Acres/1000 pop. | 8.0 Acres/1000 pop. |

Remedial Action

A number of park projects are included in the current Capital Improvement Program and the proposed Projects '75 bond program. In some cases funds are for development, but in others for acquisition only. Park land now owned by San Jose will generally be developed by 1980.

DEVELOPED PARK ACREAGE BY 1980

| Facility | Existing | CIP | Total | Bonds | Total |
|---|---|---|---|---|---|
| Neighborhood | 331.34 | 95.17 | 426.51 | 72.43 | 498.94 |
| District | 113.00 | 19.35 | 132.35 | 90.80 | 223.15 |
| City wide | 1057.30 | .33 | 1057.63 | 790.00 | 1847.63 |
| | 1501.64 | 114.85 | 1616.49 | 953.23 | 2569.72 |

If the bond program for parks passes, the service level will rise from its current figure of 2.81 acres per thousand to 3.97 acres per thousand. This would reduce the deficiency but is still below the City's standard. However, if the bond program fails, funds programmed in the 1975-80 CIP will not be sufficient to maintain the existing level relative to a projected 1980 population of 647,000.

| Facility | Existing | CIP only | CIP/Bonds | Standard |
|---|---|---|---|---|
| Neighborhood | .62 | .65 | .77 | 1.5 |
| District | .20 | .20 | .34 | 1.5 |
| Citywide | 1.98 | 1.63 | 2.85 | 5.0 |
| Acres/1000 pop. | 2.81 | 2.48 | 3.96 | 8.0 |

By the end of this time period, San Jose will also have acquired park land which will be yet undeveloped. The acreage is as follows:

| | |
|---|---|
| Neighborhood Parks | 90.31 |
| District Parks | 71.20 |
| Citywide Parks | 307.63 |

If this land were to be included, the citywide service level would rise to 5.56 acres per thousand. This number would be deceptive as this undeveloped acreage would not be readily useable by the public.

Most of the funds designated for citywide park acquisition and development are for Lake Cunningham and for the Coyote Creek Park Chain. These projects will meet some of the needs neglected by deficiencies in local parks. Most of San Jose will remain inadequately served by the park system despite the planned additions and improvements.

Provision for Additional Growth

Additional growth was considered in computing the ratio of programmed parks to projected population by 1980. Increases beyond that point will create demand to be met to some degree by Construction/Conveyance Tax monies. This will not be sufficient to maintain service levels much less bring them closer to the standard.

Conclusions

1. San Jose does not now meet its own established standard regarding level of park service.

2. Improvements programmed in the 1975-80 CIP are not sufficient in themselves to maintain existing service levels relative to projected 1980 population.

3. Total improvements in the CIP and Projects '75 bond program will raise existing service levels but still will not meet the established standard.

4. Unless additional funds become available San Jose will not be able to meet its parks standards in the time frame of the General Plan.

13. Transportation Services

Identification of Service and Provider

The Department of Public Works plans, constructs, and maintains City streets, provides bikeways; and is generally responsible for the efficient movement of traffic throughout the City. Long-range transportation planning is based on the City's General Plan.

Close cooperation is maintained between the City, the County Transportation Agency, the Metropolitan Transportation Commission, and the California Department of Transportation on both a staff and decision making level. Four representatives of the City of San Jose sit on the County Transportation Commission. One San Jose Councilman currently represents all of the cities in the County on the Metropolitan Transportation Commission. This is most important because transportation facilities, such as freeways, expressways, and public transit, which are beyond the immediate responsibility of the City, nevertheless have far-reaching effects on the level of transportation service in the City, on the structure of land use and the nature of urban expansion.

Inventory of Transportation Facilities

Streets: The hierarchy of street facilities in San Jose is indicated below:

| Type of Facility | Capacity/Day | Lanes |
|---|---|---|
| Freeways | 60,000-130,000 | 4-8 |
| Highways | 15,000 - 40,000 | 4-6 |
| Expressways | 15,000 - 40,000 | 4-6 |
| Arterials | 10,000 - 30,000 | 2-6 |
| Collector Streets | 1,000 - 10,000 | 2 |
| Local Streets | ---------- | 2 |

The City is responsible for arterials, collector streets, and local streets. Arterials provide for major movements of traffic similar to highways and expressways. Hamilton Avenue, one of the most heavily traveled City arterials, carries 46,000 vehicles daily on the portion west of Highway 17. Local streets are designed primarily for access to abutting properties. Collector streets provide for an intermediate level of traffic efficiency including access between local streets and arterials. Currently, there are 1,400 miles of arterials, collectors and local streets in San Jose.

Bicycle Routes: The City provides three types of bicycle routes:

- Street Routes: Marked by signs and messages painted on the pavement.
- Bike Lanes: Marked by signs and special lanes for the use of bicycles on public streets.
- Bike Paths: Graded and surfaced pathways separated from a public street for the exclusive use of bicycles.

The City's tentative Bicycle Route Master Plan (1972) identifies 180 miles of bicycle routes (See Map). 31 miles of bicycle routes have been installed to date including 3 miles of street routes, 21 miles of bike lanes, and 7 miles of bike paths.

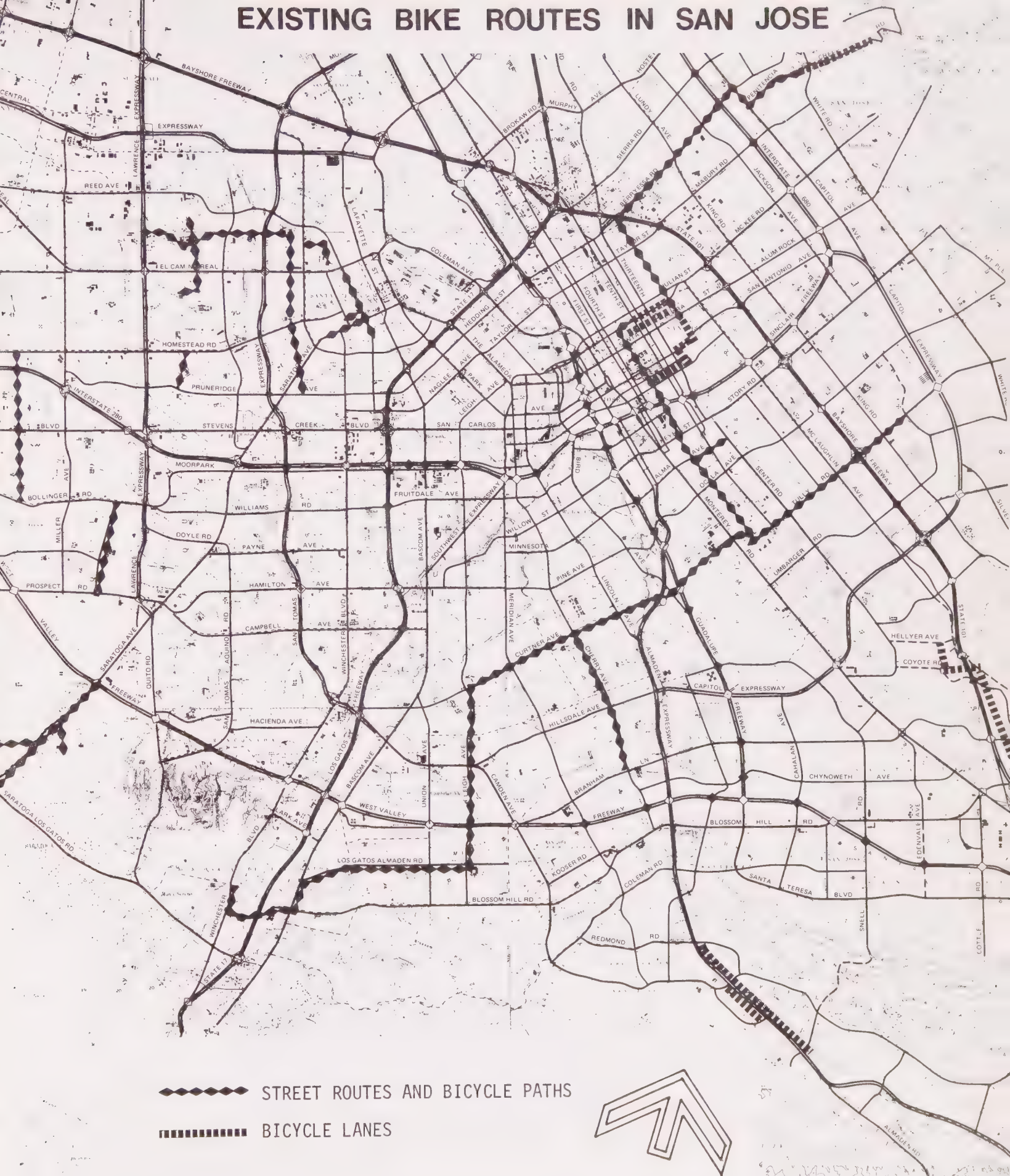
Airports: Two airports are located in San Jose; San Jose Municipal operated by the City, and Reid-Hillview operated by the County. San Jose Municipal Airport is one of the three regional airports in the Bay Area. In 1974, it accommodated service for 2,146,000 passengers and 13 airline carriers. In addition to approximately 50,000 commercial flights, it also accommodated 355,000 general aviation flights. By comparison, Reid-Hillview accommodated 303,000 general aviation flights in 1974.

## Levels of Service

There is no official criteria for assessing levels of transit service, although percentage of ridership is one possible measurement. At present, less than one percent of all trips are carried on the county bus system. It has been estimated that the county bus fleet must be increased to 800 units in order to accommodate anything approaching 10 percent of all trips. This still falls short of the 30 percent county goal previously discussed.

The level of service for movement of traffic on City streets is measured in

# EXISTING BIKE ROUTES IN SAN JOSE



degrees of congestion defined by the Highway Research Board of the National Academy of Sciences. The five levels of service for urban streets are:

| Level of Service | Description |
|---|---|
| A | No "green light" phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turning movements are easily made, and nearly all drivers find freedom of operation, their only concern being the chance that the light will be red, or turn red, when they approach. |
| B | An occasional "green light" phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel somewhat restricted within platoons of vehicles. |
| C | Occasionally drivers may have to wait through more than one red signal indication, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. In the absence of local conditions dictating otherwise, this is the level typically associated with urban design practices. |
| D | Delays to approaching vehicles may be substantial during short peaks within the peak period, but enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive back-ups. |
| E | Full capacity occurs at level of service E. It represents the most vehicles that any particular intersection approach can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and delays may be great (up to several signal cycles). |

San Jose's street system has been designed to achieve a level of service "C" at peak hours. This level generally prevails except at major intersections, such as the ones below, where levels of service "D" or in some cases, "E" prevail:

- Almaden Expressway and Blossom Hill Road
- Alum Rock Avenue and Capitol Avenue
- Berryessa Road and Capitol Avenue
- Branham Lane and Almaden Expressway
- Camden Avenue and Bascom Avenue
- Hamilton Avenue and Bascom Avenue

- King Road and Story Road
- Market Street and Santa Clara Street
- Prospect Road and Saratoga Avenue
- Senter Road and Capitol Expressway
- Snell Avenue and Monterey Highway

Several sections of the freeway system also experience relatively congested conditions during peak hours. In particular: Route 101 in the Alum Rock Avenue area, Route 17 in the Route 280 area, and Route 280 between Route 17 and Saratoga Avenue.

Transportation Improvement Proposals

A number of transportation improvement projects are included in the current Capital Improvement Program and the proposed Projects '75 bond program. Specific major projects included in the CIP are:

- Meridian Avenue bridge at Guadalupe River
- Julian Street realignment from proposed Guadalupe Freeway to present underpass.
- Connector from Vine Street to Almaden Avenue south of San Carlos Street.
- Various street improvements in Alviso.
- Brokaw Road Overpass (at Highway 17).
- Street construction/widening:

| Street | Bounds | No. Lanes |
|---|---|---|
| King Road | Route 680 to Mabury | 4 |
| Miller Ave. | Atherwood to Phil | 4 |
| White Road | Story to Alum Rock | - |

These and other miscellaneous projects are summarized in Table 1.

Projects in the $67 million bond issue (Projects '75), scheduled for voter approval, include:

Bicycle path and route program: 200 miles of on-street routes and 50 miles of off-street routes.

Widen Blossom Hill Road Bridge at Guadalupe River.

Alviso street improvements.

Street construction/widening:

Table I

Funded Transportation Improvement Projects

| Approved Projects Rebudgeted from 1974-75 | 1975-1976 | 1976-1977 | 1977-1978 | 1978-1979 | 1979-1980 | Total |
|---|---|---|---|---|---|---|
| Julian St. Realignment | 190,000 | | | | | 190,000 |
| Meridian Road Bridge | 40,000 | | | | | 40,000 |
| Subtotal | 230,000 | -0- | -0- | -0- | -0- | 230,000 |
| **Traffic Improvements Included in Current CIP** | | | | | | |
| Almaden-Vine Connection | 320,000 | | | | | 320,000 |
| Alviso St. Improvements | 70,000 | 70,000 | | | | 140,000 |
| Bridges & Culverts | 300,000 | 270,000 | 282,000 | 300,000 | 300,000 | 1,452,000 |
| Brokaw Rd. Overpass at Rt. 17 | 300,000 | | | | | 300,000 |
| King Rd., Rt. 680 to Mabury | 1,290,000 | | | | | 1,290,000 |
| Local St. Assess. Improve. | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 1,000,000 |
| Miller Avenue | 70,000 | | | | | 70,000 |
| Miscellaneous Curbs & Gutters | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 | 200,000 |
| Miscellaneous St. Improvements | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 500,000 |
| Preliminary Engineering | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 100,000 |
| Railroad Grade Crossings | 60,000 | 60,000 | 60,000 | 60,000 | 60,000 | 300,000 |
| Resurfacing Major Streets | 621,000 | 636,000 | 648,000 | 663,000 | 700,000 | 3,268,000 |
| Signals | 683,000 | 682,000 | 627,000 | 692,000 | 714,000 | 3,398,000 |
| Streets Adjacent to City Prop. | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 250,000 |
| White Rd.-Story to Alum Rock | 50,000 | 1,114,000 | 998,000 | | | 2,162,000 |
| Subtotal | 4,174,000 | 3,242,000 | 3,025,000 | 2,125,000 | 2,184,000 | 14,750,000 |

| Street | Bounds | No. Lanes |
|---|---|---|
| Aborn Road | Capital Ave. to White Road | 6 |
| Moorpark Ave. | Bascom to Winchester | 4 |
| San Felipe Road | Aborn to Yerba Buena | 4 + 2 bike |
| Branham Lane | Union to Monterey Hwy. | 4 |
| Santa Teresa Blvd. | Allen to Taormina | 6 |
| Cahalan Road | Blossom Hill to Branham | 2 |
| Pearl Ave. | Severance to Blossom Hill | 4 |
| Cottle Road | Santa Teresa to Blossom Hill | 4 |
| McLaughlin | Williams to Capital Ave. | 4 |
| Senter Road | Story to Monterey Road | 4 |
| Tully Road | Curtner to Monterey Road | 6 |
| Monterey Road | Curtner to Senter | 6 |

Funding

The City of San Jose has three major sources of funds for transportation improvements:

- State Gas Tax Revenues: $1.3 million annually available for improvement purposes.
- Federal Aid Urban (FAU) funds: $1.1 million annually on the three-year program.
- Bonding: Both unexpended 1966 bond funds (almost depleted), and prospective bond issues (e.g., Projects '75).

HUD Block Grant funds are also available for core area redevelopment projects including street improvements.

The City can also establish special assessment districts for transportation improvements benefiting a localized area. Special state sources of improvement funding include the Bicycle Lane Account, Railroad Grade Separation Fund, and Railroad Grade Crossing Protection Fund.

The construction of new City streets is carried out primarily by developers of abutting properties according to City subdivision and street width standards. The normal 60 foot width residential street is usually financed wholly by the developers--30 feet on each side. Developers are partially reimbursed with City construction and conveyance tax revenues for street widths beyond the usual 60 foot minimum.

Aside from the CIP improvements listed above, the City currently has no available funds for highly critical transportation improvement needs. This points to the importance, as previously implied, for non-street transportation measures such as public transit and auto disincentives; also car pooling and modified work hours currently being promoted by some employers in San Jose.

Conclusions

1. The City must maintain close cooperation with County, regional, and State transportation agencies since major transportation facilities constructed or approved by these agencies have far reaching impacts on San Jose.

2. The City lacks funding to improve City streets and intersections where critical levels of service exist. Improvements included in the proposed $67 million bond issue will only partially address this problem.

3. Street improvements or not, there is a critical need to promote a more viable public transit system; and to encourage use of bicycles, and such measures as car pooling and modified work hours.

14. Schools

Definition of Service and Identification of Providers

The responsibility for providing education rests with the State. At the local level, this state responsibility is exercised through the various school districts. Within Santa Clara County there are thirty-seven school districts, twenty-four of these provide educational service for some part of San Jose. This includes four community college districts and Santa Clara County rehabilitation facilities. Although the City has neither the authority nor the responsibility for providing schools, it can consider the impact on schools in its review of development proposals.

Initiative Ordinance No. 16764, commonly known as the "Measure B" ordinance, provided that the City Council could not rezone property to a residential use in an impacted school district unless that district certifies that an agreement has been made with the applicant to provide adequate school facilities of at least a temporary nature. The provisions of this ordinance expire on April 26, 1975. However, Ord. No. 17659 extends these provisions until December 15, 1975.

Levels of Service

A. Optimum

The "Measure B" ordinance established standards by which school districts and the City Council can judge the adequacy of school service.

The table below lists the amount of space per pupil considered to be adequate to prevent overcrowding and double sessions.

| Type of School | Enrollment | Sq. Feet per Pupil |
|---|---|---|
| Elementary school comprising kindergarten and grades 1 to 6 inclusive | 300 or more | 55 |

| Type of School (Continued) | Enrollment | Sq. Feet per Pupil |
|---|---|---|
| Elementary school comprising grades 7 and 8 | 750 or more | 75 |
| Junior high school comprising grades 7 to 9 inclusive | 750 or more | 75 |
| Junior high school comprising grades 7 to 10 inclusive | 750 or more | 75 |
| High school comprising grades 7 to 12 inclusive | 750 or more | 80 |
| High school comprising grades 9 to 12 inclusive | 750 or more | 85 |
| High school comprising grades 10 to 12 inclusive | 750 or more | 85 |

B. Existing service

Funding levels vary from one school district to another. Differences in service thus result. Some school districts have been unable to keep up with expanding residential growth. The following are regarded as impacted, i.e., the current enrollment exceeds design capacity of the individual schools within the district, as of January, 1975.

San Jose Unified
Eastside Union High School District
Evergreen School District
Fremont Union High School District
Morgan Hill Union School District

Remedial Action

In order to remedy existing inadequacies, concerned parents, teachers and school administrators organized a campaign in 1973 to seek passage of an initiative which would prohibit rezoning property to residential categories in those school districts which did not meet the standards. The initiative measure passed in April. Besides the prohibition on additional residential zoning, "Measure B" required detailed study of the costs and benefits of growth. This study is now in progress. Meanwhile, a mechanism has been established whereby home builders can negotiate agreements with school districts for providing school facilities, usually temporary classrooms.

Provision for Additional Growth

The requirements of the "Measure B" ordinance will be in effect until December 15, 1975. The completion of the growth study is expected by that time. The City Council is not, however, legally compelled to utilize the

information in future decision-making even to the extent of continuing the procedures with regard to schools. Additional growth has the possibility of further negatively impacting certain school districts.

Conclusions

1. Standards have been established whereby the school needs generated by any residential development can readily be measured.

2. Some school districts have been unable to keep up with expanding residential growth.

3. "Measure B" has temporarily prohibited additional residential zoning in impacted areas except in those cases in which the builder has agreed to provide the school facilities necessitated by his development.

4. "Measure B" does not prohibit construction in areas which already have residential zoning.

5. Additional growth may well have a negative effect on the level of school service in particular districts.

## C. LAND USE PROBLEMS AND CONFLICTS

Of all the factors influencing the future form and development of the City, one of the most important and most obvious is the nature and condition of the City as it exists today. In surveying the present physical condition of the City, Planning staff has observed a variety of land use problems. This analysis is not complete, but the following will serve as a starting point for discussion by the Citywide Coordinating Committee and the Planning Area Task Forces. An additional, broader perspective on planning issues is that provided by the expression of concerns by the citizens participating in the General Plan revision program. Those expressed concerns and the problems discussed here are equally relevant to the General Plan. Resolution of the issues and solution of the problems will be sought in the forthcoming phases of the work program.

### 1. Mixed, Incompatible Land Uses

There are numerous older areas of the City in which an extremely varied pattern of land usage exists. In parts of South San Jose for example, residential, commercial, and industrial development occurred in a completely uncoordinated, haphazard fashion with the result that such areas have no predominant character; they are neither residential nor industrial neighborhoods. One of the observable problems in such areas is the negative effect

of the industrial uses on the nearby residential uses, resulting from the truck traffic generated by industrial uses, the lack of adequate off-street parking which clutters the street, and the generally "unkempt" appearance of some industrial properties. There is a problem sometimes of noise generated by industrial uses. Such conditions may not affect the operation of the industrial properties but generally detract from the liveability of the residential areas. It is not being suggested that differing land use types in close proximity are necessarily incompatible, but if they occur through happenstance rather than forethought, they may well be.

2. Intruding Uses in Residential Neighborhoods

This land use problem is similar to the above, but is more a matter of a single non-residential use or a group of such uses impacting the immediate neighborhood. The actual problem is the competition for space or reduction of a healthy neighborhood by non-residential uses, or the impact of non-residential parking and traffic on a neighborhood. In some instances a single non-residential use existed at the periphery of a residential area and created no problems until it expanded or attracted another, similar use.

3. Uncoordinated, Strip, Commercial Development

This form of commercial development is prevalent on many of the City's major arterials. It occurs in two different forms: (1) a more or less continuous ribbon of individual commercial establishments; or (2) a scattering of commercial uses along the entire length of one or more blocks. In the former case, a "wall" effect is created which eliminates exposure and visibility of adjacent neighborhoods. In the latter case, the intervening vacant parcels are suited for little other than commercial use, regardless of whether there is economic justification for additional commercial usage in the area. In either case, this form of development generates far more traffic and requires more on-street parking and traffic control improvements than a comparable amount of square footage located in a shopping center. As a result of strip commercial development, as you are driving down Stevens Creek Blvd., for example, you are continuously faced with cars turning onto the street or turning left against the flow of traffic. This causes the street to be congested even when it is not carrying the traffic volume it was designed to. This form of commercial development in the City also tends to be visually unattractive with varying building heights, varying setbacks from the street, and a proliferation of signs.

Given the amount of commercial zoning on arterial streets in the City, this problem may worsen in the future.

4. Transitions in Land Use

In parts of San Jose, one can discern a process of conversion from one land use type to another taking place. In some instances, it is a replacement of single-family housing by commercial uses, while in other instances it is a conversion from lower residential densities to higher residential densities.

In some cases the unplanned, uncontrolled manner of the transition is creating problems for the present, predominate use. The problems tend to be the same as those encountered in areas where mixed land uses already exist--traffic and parking conflicts and a noise level unsuitable for residential neighborhoods. This situation can also create uncertainty on the part of property owners as to the future of an area, and discourage maintenance and improvement of properties. When transitions from one land use type to another are taking place in a scattered fashion, any conflicts between the types of use will obviously have a more widespread effect.

The planning challenge is that of how to allow land use changes which are appropriate, while controlling the amount and the impact of change. Can, for example, the conversion of one or a few dwelling units to commercial uses be allowed without setting off a wave of change along an entire block.

5. Unattractive or Inadequate Public Improvements

There are areas of the City such as the Mayfair neighborhood of Alum Rock, where the lack of curbs, gutters, sidewalks, street lighting and the poor condition of street paving give the area a generally unattractive appearance. In some cases, public improvements were incomplete or substandard to begin with, while in other cases, the problem is a present lack of adequate public maintenance. A lack of good public "housekeeping" tends to discourage the maintenance of private property.

Other neighborhoods of the City with substandard public improvements typically developed in the County and were subsequently annexed to the City. Some such "pockets" of development are still unincorporated.

6. Isolated Residential Areas

There are residential areas of the City which have been severed from a larger neighborhood or cut off from another neighborhood by the construction of a freeway or a major street. This has left some residential areas as isolated, incomplete neighborhoods without ready access to convenient shopping or other neighborhood facilities, and more subject to pressure from other land uses. Some neighborhoods are internally interrupted or divided by the presence of a large non-residential facility or a group of non-residential uses. Another aspect of the problem is the visual isolation of a neighborhood as a result of a continuous "wall" of commercial development along the edge of the neighborhood.

7. Intruding Traffic in Residential Areas

A problem common to many residential areas of the City is the presence of excessive automobile traffic which reduces the safety and livability of the area. In some cases such as the areas adjacent to parts of South Market Street, it is a result of inadequate on-and-off-street parking on a major street, which results in customer and employee parking "around the corner" on residential side streets. Excessive neighborhood traffic also results from streets

bisecting a neighborhood, which are designed to move traffic through the neighborhood rather than to it. In still other instances, the lack of an articulated street system with local streets to provide access to abutting properties and collector streets to channel traffic into and out of the neighborhood is the source of the problem. In the absence of a well-designed street system, traffic flow in and out of the neighborhood tends to be diffused, affecting more of the neighborhood than it would if traffic were better channeled.

8. Visual Sameness of Residential Areas

Much of San Jose is characterized by large, undifferentiated tracts of housing. The uniformity of housing style and land use pattern, in combination with lack of topographic relief, create a monotonous visual appearance. It also retards the development of "neighborhood identity". More careful urban design solutions are required.

9. Vacant and Abandoned Structures

This is not a widespread problem in San Jose but it is a problem in specific neighborhoods. The presence of numerous vacant structures in a neighborhood gives an appearance of decline. In addition to the visual appearance, they invite vandalism.

10. Excessive Noise in Neighborhoods

Some neighborhoods are subject to undesirable levels of noise. This occurs as a result of the presence of incompatible land uses, nearby major streets or freeways, and nearby airports.

11. Impact of Airports on Nearby Land Uses

Both the San Jose Municipal Airport and Reid-Hillview Airport pose noise and safety problems for nearby land uses. The Airport Land Use Commission has some authority over land uses in proximity to airports, but this is still an issue to be addressed in the General Plan. A very specific issue is the "reuse" of land acquired by the City in the Airport Safety Zone.

# Population

# VI. POPULATION

## A. INTRODUCTION

An understanding of potential population growth is inherent to any comprehensive planning endeavor. It is necessary to assume a population size within the planning time period as an avenue to determine future land and facilities needs. It is highly desirable that there exist compatibility between projections of growth based on births and migration, and projections based on growth of economic activities. The following summarizes the initial work in assessing the prospects for future population growth. Existing City and San Jose Sphere of Influence projections were compared with a variety of projections from other sources to assess the relative compatibility of each. From this analysis, conclusions are drawn which are tentative, pending further analysis in the G.P. '75 process.

It is important to note that the projections and forecasts examined in this report are not inevitable outcomes nor are they predictions of things to come. They are, rather, calculations of what would occur if the basic assumptions of the respective projection series are proven valid. It is impossible to say whether any prediction will be accurate for a given year. However, the projections are designed to provide planners and decision-makers with an estimate of the future population for planning purposes.

## B. HISTORIC POPULATION GROWTH

Both Santa Clara County and the City of San Jose have grown at phenomenal rates since 1950. The County has grown over 375%, from a population of 296,600 (1950) to 1,163,000 (1974). Over two-thirds of the increase was the result of tremendously high rates of inmigration. Since 1950, the annual population increase ranged between a low of 19,200 (1950) and a high of 57,100 (1960). Net inmigration ranged between a low of 14,036 (1971) and a high of 43,900 (1960). The fastest growth period for the County occurred in the mid-1950's to the mid-1960's. More recently, levels of annual population increase, natural increase, and inmigration have declined sizably.

The City of San Jose's population growth rate has exceeded County growth with a population of 527,500 in 1974, representing an increase of 500% over the 95,280 population in 1950. The bulk of this growth was the result of an extremely high in-migration rate. The City's greatest growth period occurred during the 1960's decade. San Jose's growth as a percent of County growth was 33% in 1950, ranging between a low of 26% (1957) to a high of 46% (1973). This percentage of County growth has been gradually increasing in the recent past.

## C. PROJECTIONS OF FUTURE POPULATION GROWTH

### Projection Methods

Several government agencies have prepared population projections for Santa Clara County. While there are various methods of doing projections, only two were employed by these agencies:

1. A demographic, or cohort survival model, groups a base population by sex category, and year-of-birth, by five time increments. The population is "aged" over the projection period with net in-migrants added, deaths subtracted and births (forming new cohort groups) calculated. Necessary assumptions include future mortality, fertility and migration rates.

2. An econometric model presupposes a given level of industrial and service-sector economic activity within a given period of time. The new jobs which would be created by that level of economic activity are projected for the same time period. Population growth can be expected to occur as people outside the area respond to increased job opportunities within the area. That population growth is calculated based on assumptions as to the percentage of the population which is in the labor force and the size of the average household.

Some of the projections examined utilize both techniques operating in tandem. Various other models, e.g., land location, can be incorporated into the process to provide a more comprehensive growth projection.

San Jose's projections were derived from a cohort survival model. The projections provide a range of possible levels of future population, based on varying assumptions. For planning purposes, it is necessary to pick a target projection from within the range of projected levels of population. It should be noted that this projected level of population does not necessarily represent an "ideal" population size. An "optimum" population size will be considered in subsequent phases of the program.

Projections of future population growth in Santa Clara County are presented in Table 1. A description of each agency projection is given below.

1. The California Department of Finance (DOF) projects population growth for the State, using a sophisticated demographic model, with each county being allocated a share of the total. These projections provide the basis for many of the other projections considered in the population report. Mortality is assumed to be constant as no significant change has occurred in the past mortality rate. Three different migration rates were used for comparative analytical purposes. The Series D-100 projections assume a baseline, annual net in-migration of 100,000 people. Series D-150 assumes annual net in-migration of 150,000 people while Series E-0 assumes zero migration. Two fertility rates were used: Series D-150 and D-100 assume a level of fertility of 2.5 children per woman, while Series E-0, representing a zero population growth trend, assumes a replacement birthrate of 2.1 children per woman.

2. The Association of Bay Area Governments has developed a more intricate regional growth allocation model using DOF Series D-150 and E-0 data as well as nationally projected regional employment totals. The model allocates a variety of growth indices to county and sub-county areas according to three sets of parameters and an adopted maximum range of population growth for the year 2000. Maximum levels of 6.0 to 7.5 million people (2000) conforms to DOF Series E-0 and D-150, respectively, as allocated to all counties in the region. Three projection levels, based on varying parameters include:

   Losouth portrays low regional population and economic growth (6.2 million people and 2.6 million jobs by 2000), and a continuation of growth trends from the 1960's where a large share of new employment growth locates in South Bay counties.

   Grosouth represents relatively high regional population and economic growth (7.5 million people and 3.2 million jobs by 2000), and assumes a continuation of South Bay economic dominance in the future.

   Gronorth uses the same regional population and economic growth assumptions as Grosouth, but with a more balanced growth distribution between the North and South Bay.

   The latter would be a departure from historical trends.

3. Santa Clara County has prepared various series of projections for analytical purposes assuming net annual in-migration rates of 25,000; 15,000; 10,000, and zero. Their model has both demographic and econometric components which are run alternately, exchanging data until close agreement is achieved between labor force and migration levels.

4. The California Regional Water Quality Control Board uses 1971 DOF projections in producing a combined E-0 and D-100 projection, and a D-150 projection. Their projections are higher than the projections more recently produced by DOF.

5. The Bay Area Air Pollution Control District based its projection on the 1971 DOF D-150 series. It is difficult to compare the District's projections with more recent DOF projections as the underlying assumptions are slightly different.

6. Rapid Transit Development Project projections were produced by consultants for Santa Clara County. Their baseline projections were arrived at by analyzing historical trends of the County's attractiveness to employment and population growth within the regional, State and national context. The County's share of future growth was calculated based on assumptions of future attractiveness. Future population was calculated from this by assuming future household sizes and fertility rates.

7. The Santa Clara Valley Water District cooperated with the County in arriving at a future growth estimate for water supply purposes. Their

projection derives from an earlier County Series 5,000 projection (net annual inmigration of 5,000 people and a fertility rate of 2.1 births/woman). This series has been superseded by more recent County projections, but remains current for District planning purposes as of December 1974.

8. The San Felipe Project Draft EIR produced independent and extremely high population projections. This projection has been challenged as to its statistical validity and is included here only for its extreme high growth contrast.

9. Major assumptions of the City's cohort survival model include:

Fertility:

| | |
|---|---|
| D(HIGH) | Average number of births/woman will rise from 2.2 in 1975 to 2.5 by 2000. This approximates U.S. Fertility Series D. |
| E(MEDIUM) | Average between D and F with average births/woman maintaining at 2.1 from 1970 to 2000. |
| F(LOW) | Average number of births/woman will decline from 2.0 in 1975 to 1.8 by 2000. This approximates U.S. Fertility Series F. |

Migration:

| | |
|---|---|
| HIGH | Annual net in-migration dropping from 15,000/yr. for 1970-75 to 10,000/yr. by the year 2000. |
| MEDIUM | Annual net in-migration dropping from 15,000/yr. for 1970-75 to 5,000/yr. by the year 2000. |
| LOW | Annual net in-migration dropping from 15,000/yr. for 1970-75 to 0/yr. by the year 2000. |

It should be added that all the projections assume a continued healthy economy, and public policies compatible with population growth, and do not anticipate erratic and unpredictable changes in migration, fertility or other determinants of growth. Natural disasters, wars or any other unforeseen, though possible events, cannot be predicted within this context.

The projection systems reviewed in this section are relatively simple in their methodologies (when compared to the complexities of occurring events), coarse in their grain of analysis, and approximate in their simulation capabilities. The reader is cautioned not to place more reliance on the data than these operational characteristics can support.

Projected County Growth

Table I represents the various population projections for Santa Clara County area. It can be seen that the mid-range projections (DOF:D100; ABAG; Grosouth; Santa Clara

COMPARISON OF POPULATION PROJECTIONS BY SELECTED AGENCIES FOR
SANTA CLARA COUNTY FROM 1970 TO 2000

| | Ca. Dept. of Finance[1] | | | ABAG[2] | | | Santa Clara County[2] | | | | | C.R.W.Q.C.Bd.[3] | | BA/APCD | S.C.Co. RTDP | SCVWD | SFP-EIR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | D-150 | D-100 | E-0 | Grosouth | Gronorth | Losouth | 25,000 | 15,000 | 10,000 | Zero | Econo. | D-150 | E-0 Rec | | | | |
| 1970 | 1,075,000 | 1,075,000 | 1,075,000 | 1,065,000 | 1,065,000 | 1,065,000 | 1,065,000 | 1,065,000 | 1,065,000 | 1,065,000 | 1,065,000 | 1,042,000 | 1,042,000 | 1,075,000 | 1,065,400 | 1,065,000 | 1,065,400 |
| 1975 | 1,213,000 | 1,213,000 | 1,208,000 | | | | 1,244,000 | 1,191,000 | 1,165,000 | 1,112,000 | | | | 1,225,000 | | | 1,250,100 |
| 1980 | 1,345,000 | 1,343,000 | 1,309,000 | 1,308,000 | 1,255,000 | 1,240,000 | 1,431,000 | 1,323,000 | 1,269,000 | 1,161,000 | 1,331,000 | 1,349,000 | 1,271,000 | 1,394,000 | 1,347,000 | 1,279,359 | 1,669,700 |
| 1985 | 1,495,000 | 1,488,000 | 1,399,000 | | | | 1,624,000 | 1,453,000 | 1,376,000 | 1,210,000 | | | | 1,583,000 | | | 1,966,900 |
| 1990 | 1,632,000 (51.8%) | 1,164,000 (50.1%) | 1,482,000 (37.9%) | 1,594,000 (49.7%) | 1,464,000 (37.5%) | 1,408,000 (32.2%) | 1,816,000 (70.5%) | 1,591,000 (49.4%) | 1,479,000 38.9%) | 1,254,000 (17.7%) | 1,583,000 (48.6%) | 1,762,000 (69.0%) | 1,508,000 (45.0%) | 1,770,000 (64.6%) | 1,568,000 (47.0%) | 1,471,600 (38.0%) | 2,079,650 (95.0%) |
| 1995 | 1,758,000 | 1,722,000 | 1,547,000 | | | | 1,997,000 | 1,712,000 | 1,569,000 | 1,284,000 | | | | | | | |
| 2000 | 1,859,000 | 1,805,000 | 1,590,000 | 1,852,000 | 1,638,000 | 1,523,000 | 2,167,000 | 1,820,000 | 1,646,000 | 1,299,000 | | 1,910,000 | | | | 1,652,352 | 2,192,400 |

1. Base year data taken from uncorrected 1970 census data
2. Actual population, 1970 U.S. Census
3. Base year data taken from early DOF estimates
4. Estimated by factoring 1985 to 2000
( ) Percentage population increase, 1970 to 1990



Table 1

County: 15,000 and RTDP) are in close agreement. Reasonably low projections (DOF:E-0; ABAG: Gronorth; Santa Clara County: 10,000; S.C.V.W.D.) are also in close agreement. Very low projections (Santa Clara County: zero; ABAG: Losouth) differ as to their reduced growth posture while high growth projections (DOF:D-150; Santa Clara County: 25,000; BAAPCD; SFP-EIR; CRWQCB: D-150) show a wide disparity in their accelerated growth outlook.

Percentage increase in population (1970 to 1990) further illustrates the conformity among projections. Mid-range increases range between 47.0% and 50.1%. Reasonably low projections range between 37.5% and 38.7%. Very low projections include percentage increase in population of 32.2% and 17.7% while high growth projections range between 51.8% and 95.0%.

It is important that San Jose projections and those of other agencies be in general conformance with each other. The agencies' projections are often used for planning, program, fiscal allocation and decision-making purposes which could ultimately affect the future of San Jose. Thus, it is necessary for a consistent growth outlook so as to avoid incongruous decisions.

Projected San Jose Sphere of Influence Growth

The following chart presents San Jose cohort survival projections for the sphere of influence. The projections are based on the previously described demographic assumptions. It is entirely plausible that the actual population level for a given year will fall somewhere within this range. The projections account for reasonably stimulated or depressed future growth but not extreme deviations of present growth trends.

From a comparison of City and County growth projections, it was determined that the range of future county growth which would also locate within the San Jose sphere of influence would be between 50% and 56%. It is possible from this to reduce projections of future county growth to an equivalent sphere of influence population level. With further analysis, it can be concluded that projection series for the sphere of influence appear to be well founded when compared to the variety of county projections as translated to sphere of influence population. A preliminary conclusion begins to appear, however; that is, the full range of population projections may be too high and may need to be scaled down. This cannot be definitely determined pending the future extent of present trends toward reduced population growth.

The percentage population increase (1970-1990) ranges from 48.0% to 93.0%, and 23.5% to 58.3% (1975-1990). The population level (1975-1990) ranges from 794,702 to 1,035,982 with an absolute increase between 151,000 and 381,000. From comparisons with County population projections and assuming the sphere of influence "captures" 56% of County growth to 1990, it seems more realistic to consider population increases within a reduced Medium-E to Low-E range. The percentage population increase (1975-1990) is projected to be between 27.5% and 40.7%, with a population level between 827,591 and 913,303. The absolute increase in this case would be between 179,000 and 264,000 new residents.

SAN JOSE SPHERE OF INFLUENCE COHORT SURVIVAL

POPULATION PROJECTIONS, 1975 to 2000

(for each of three assumptions of fertility and migration)

| | High | | | Medium | | | Low | | |
|---|---|---|---|---|---|---|---|---|---|
| | D | E | F | D | E | F | D | E | F |
| 1970 | 536,825 | 536,825 | 536,825 | 536,825 | 536,825 | 536,825 | 536,825 | 536,825 | 536,825 |
| 1975 | 654,571 | 648,902 | 643,235 | 654,571 | 648,902 | 643,235 | 654,571 | 648,902 | 643,235 |
| 1980 | 785,020 | 772,108 | 759,194 | 758,289 | 745,570 | 732,843 | 731,560 | 719,024 | 706,484 |
| 1985 | 914,742 | 890,971 | 867,194 | 858,578 | 835,690 | 812,800 | 802,413 | 780,409 | 758,404 |
| 1990 | 1,035,982<br>(58.3%)<br>(93.0%) | 999,016<br>(53.9%)<br>(86.1%) | 962,045<br>(49.6%)<br>(79.2%) | 948,236<br>(44.9%)<br>(76.6%) | 913,303<br>(40.7%)<br>(70.1%) | 878,373<br>(36.5%)<br>(63.6%) | 860,484<br>(31.4%)<br>(60.3%) | 827,591<br>(27.5%)<br>(54.2%) | 794,702<br>(23.5%)<br>(48.0%) |
| 1995 | 1,155,201 | 1,103,280 | 1,051,368 | 1,034,279 | 985,947 | 937,609 | 913,362 | 868,612 | 823,863 |
| 2000 | 1,159,141 | 1,096,565 | 1,033,987 | 1,003,311 | 946,315 | 889,320 | 847,484 | 796,071 | 744,651 |

1. Actual population, 1970 U.S. Census.

( ) Top parentheses contain the percentage of population increase from 1970 to 1990 for comparison with County projections.

( ) Bottom parentheses contain percentage of population increase for the planning period 1975 to 1990.

In selecting a target population projection, the Medium-F (a medium migration rate and low birth rate) seems most plausible for planning purposes. The percentage population increase (1975-1990) for this series would be 36.5%, with a population level (1990) of 878,373 and an absolute increase in residents of 235,000.

Projected City of San Jose Growth

The final table presents population projections for the City of San Jose. Projections for the City and the sphere of influence possess many commonalities: projections consist of reasonably high and reasonably low growth rates, and a more moderate growth rate between the two limits. The range of projected populations is smaller for short-term projection years so that a population target level can be selected with the likelihood of a relatively high degree of accuracy. As the projection period increases and the growth outlook becomes more uncertain, the range of population levels broadens while the ability to forecast a specific population target level decreases. It should be emphasized that migration and fertility trends are implicitly assumed to be more stable for San Jose than in the past. Barring any unforeseen and unpredicted population changes, it is quite likely that actual population levels for a given year will fall somewhere within San Jose's cohort survival projections.

By examining historical trends of San Jose's growth as a percentage of county growth, it is apparent that the City is capturing an increasing amount of growth occurring in the county. A range was isolated which seemed to best reflect this trend in the future. Thus, the City was assumed to capture between 45% and 49% of county growth. By applying these percentages to county growth projections, it is possible to represent future City population levels in terms of county projections. It can be concluded that San Jose projections appear to be well founded when compared with most county projections. The more extreme high and low county projections also relate well to City high and low series projections or, in a few cases, exceed the City's range. This is particularly true if the City captures 49% of County growth.

A future trend seems to be emerging. The City's entire population range for a given year may be too high. This is highly dependent on the future extent of declining population growth (both migration and fertility) and a lower rate of absorption of county growth. For purposes of General Plan 1975, a conservative view should be taken toward prematurely shifting the range of City growth downward pending more definitive evidence of this trend.

Examining the mid-range projections of other agencies shows that, if San Jose absorbed 49% of County growth, our Medium-E to Low-E projections would be more consistent with these views of future growth. If a lesser absorption rate is assumed, either 47% or 45%, then the City's Low projection series is most consistent. High-range projections of Santa Clara County fall solidly into City high projections for 49% absorption and into the City medium projections for 47% and 45%.

The percentage of population increase (1970-1990) ranges between 52.1% and 102.8% and (1975-1990) between 24.4% to 63.1%. The ultimate population level (1975-1990) ranges between 699,702 to 932,914, representing an absolute increase of 137,000 to

CITY OF SAN JOSE COHORT SURVIVAL

POPULATION PROJECTIONS, 1975 to 2000

(for each of three assumptions of fertility and migration)

| | High | | | Medium | | | Low | | |
|---|---|---|---|---|---|---|---|---|---|
| | D | E | F | D | E | F | D | E | F |
| 1970 | 459,913 | 459,913 | 459,913 | 459,913 | 459,913 | 459,913 | 459,913 | 459,913 | 459,913 |
| 1975 | 572,138 | 567,230 | 562,314 | 572,138 | 567,230 | 562,314 | 572,138 | 567,230 | 562,314 |
| 1980 | 696,293 | 684,951 | 673,611 | 669,563 | 658,410 | 647,257 | 642,834 | 631,866 | 620,901 |
| 1985 | 818,873 | 797,814 | 776,756 | 762,710 | 742,534 | 722,359 | 706,543 | 687,250 | 667,960 |
| 1990 | 932,914<br>(63.1%)<br>(102.8%) | 899,981<br>(58.7%)<br>(95.7%) | 867,047<br>(54.2%)<br>(88.5%) | 845,163<br>(47.7%)<br>(83.8%) | 814,270<br>(43.5%)<br>(77.0%) | 783,376<br>(39.3%)<br>(70.3%) | 757,410<br>(32.4%)<br>(64.7%) | 728,558<br>(28.4%)<br>(58.4%) | 699,702<br>(24.4%)<br>(52.1%) |
| 1995 | 1,045,625 | 999,195 | 952,763 | 924,706 | 881,856 | 839,007 | 803,787 | 764,524 | 725,259 |
| 2000 | 1,159,141 | 1,096,565 | 1,033,987 | 1,003,311 | 946,315 | 889,320 | 847,484 | 796,071 | 744,651 |

1. Actual population, 1970 U.S. Census.

( ) Top parentheses contain the percentage of population increase from 1970 to 1990 for comparison with County projections.

( ) Bottom parentheses contain percentage of population increase for the planning period 1975 to 1990.

360,000 people. It may be more realistic, when considering moderate rather than more extreme population increases, to consider increases within the Medium-E to Low-E range. From this, the rate of increase is projected to be between 28.4% to 43.5%. Ultimate population ranges between 728,558 to 814,270, with the absolute increases in this case being between 161,000 and 247,000 new residents.

A tentative target projection is required for planning purposes. It is probably most reasonable to consider the Medium-F series. The percentage of population increase in this case would be 39.3% with an absolute increase of 221,000 people. The population level by 1990 would be 783.376.

Both the City and sphere of influence growth rates tend to decline substantially through the planning period, with the sphere declining somewhat slower than the City. Also, the growth decline is larger during the earlier projection periods, than in later years. City absorption of county growth could also decline substantially as developable land becomes scarce if development interest shifts elsewhere, such as the South County area.

## D. CONCLUSIONS

1. City and County population growth will be increasingly less dependent on immigration, with natural increase and inmigration being generally equal components of growth by 1990.

2. Birth rates will continue to decline over the next 15 years, as will the rate of population increase.

3. If migration and fertility rate trends continue as projected, Santa Clara County population could increase from its 1975 level of 1,191,000 to over 1,590,000 in 1990.

   The City of San Jose's population will constitute an increasingly larger percentage of total County population, increasing from approximately 45% in 1975 to approximately 49% in 1990.

4. The San Jose sphere of influence population will also constitute an increasingly larger percentage of total County population, increasing from 54% in 1975 to approximately 56% by 1990.

5. If migration and fertility rate trends continue, the City's population will increase from an estimated 562,314 in 1975 to approximately 783,376 in 1990, while the population within the City's sphere of influence expands from 643,235 to approximately 878,373 in 1990.

# Economics

# VII. ECONOMICS

## A. INTRODUCTION

In undertaking a comprehensive general plan revision, it is essential that there be an understanding of where San Jose is in terms of its development evolution. Inherent to this process is an analysis of the past and present nature of City's and metropolitan area's economy. From this and other indicators, it is possible to come to some conclusions as to the future size and character of the economy. While the local economy is a functional part of the regional, State, national and even world-wide economy, there are City options which can be brought into play to channel economic development towards desirable objectives. It is important in the General Plan context to incorporate these objectives and to correlate projected economic growth with projections of population growth, land needs and other factors.

The following discussion represents the initial work in describing and analyzing the local economy. The area's previous economic experiences and present economic position are summarized, and a variety of projections of future economic growth are presented. This work is necessary in order to assess the possible levels of future economic activity, but just as importantly, it is required for consideration of a desirable level of future economic activity.

## B. EXISTING ECONOMIC CHARACTERISTICS

### Regional Setting

The Bay Area is a center of western and national economic significance while serving as an important link between the continental United States and international markets. Where once trade, shipping and agriculture were the important sectors in the regional economy, the assorted service sector industries, e.g., finance, presently are the principal regional employers. Wholesale and retail trade, government and manufacturing are also increasingly important. In contrast to other metropolitan regions, the Bay Area's manufacturing sector is dominated by sophisticated research and development activities including: aerospace, electronics, chemicals, scientific and environmental instruments and computer technology. The establishment of this advanced technology industrial base is a relatively recent event having largely occurred subsequent to World War II. This represents a structural change in the regional economy, stimulated in part by the Federal government's large investment of defense money into rapidly growing defense industries. The region is fortunate, at present, in that it is not overly-specialized in any one industry and is thus more resilient during adverse economic conditions than it would be if dependent upon one primary industry.

Santa Clara County is a vital component in the regional economy by adding to its diversification, acting as a center of export-oriented advanced technology manufacturing industry, and attracting a highly skilled labor force.

While the County has absorbed a large quantity of the recent manufacturing and employee growth in the region, it has also become a sub-regional financial and office center.

Santa Clara County Economy

Even though Santa Clara County interacts with the regional economy in a variety of ways, it also is a semi-autonomous local economic unit. As the County's economy developed, it became increasingly independent, particularly since manufacturing, its principal economic sector, is aimed at markets which extend throughout the nation and world rather than concentrating in Northern California.

Prior to 1950, the primary economic activity in the County was agriculture and food processing. Most products were exported out of the region. Because of the availability of inexpensive land, the area's ideal location and climate (attracting migrants moving west and returning war veterans), and federal finance and procurement policies, Santa Clara County embarked on a tremendous population and economic growth cycle. In the past two decades, Santa Clara County has changed from an area specializing in agriculture to an urban area specializing in manufacturing. The development of secondary service industries also occurred with the advent of increased population and industrial needs. The bulk of industrial growth centered in three industrial groups: electrical equipment and supplies, non-electrical machinery, and ordnance (military equipment). Large, defense-oriented industries located here and subsequently expanded their operations. When federal aerospace contracts appeared, these firms diversified into this and related fields. While these industries increased in local importance, food processing declined substantially. Currently, Santa Clara County is a nucleus of advanced technology research and development of worldwide significance.

More recently, the County's manufacturing sector has shown its strength in adaptation to changing market situations from a heavy reliance on military and other Federal contracts, to new products including: semi-conductors, lasers, medical instruments, magnetic recording and consumer and educational electronic apparatus.

Santa Clara County's manufacturing sector was, and still is to a more limited extent, composed of fast growth industries (industries whose national rate of growth is significantly higher than the national average rate of growth of the total manufacturing sector). This is one reason why the County economy grew 13.5% (1950-73) while national economy grew only 2.7% for the same period. The high rate of growth also occurred because of the regional and County competitive economic advantage - compared to other areas and regions. The County's locational attractiveness as a living environment and local industrial agglomeration also played important roles. With the increase in manufacturing

employment came a demand for supportive economic activities. This fostered an expansion of the financial, business and personal service sectors particularly since average personal income in the County is one of the highest in the nation.

Currently, Santa Clara County has an array of consumer and business services which are sufficient to handle all but a few local needs. In addition, income earned locally is initially spent locally and is often recirculated many times entirely within the local economy. A high income-multiplier effect is generated which creates additional jobs and expansion of the service sector. The County presently has only a minimal role in serving the viable rural agricultural areas to the south.

The following table provides an understanding of the changing relationships among local industries.

| EMPLOYMENT BY INDUSTRY | 1950 Size | 1950 % Emp. | 1970 Size | 1970 % Emp. |
|---|---|---|---|---|
| Agriculture | 16.2 | 15 | 6.7 | 2 |
| Manufacturing | 22.1 | 20 | 128.0 | 30 |
| Aerospace | 2.5 | 2 | 71.1 | 17 |
| Non-Manufacturing | 71.6 | 65 | 293.5 | 69 |
| Trade | 22.6 | 21 | 80.9 | 19 |
| Services | 18.2 | 17 | 97.2 | 23 |
| Government | 11.7 | 10 | 60.2 | 14 |
| Construction | 9.4 | 9 | 20.2 | 5 |
| TOTAL | 109.9 | 100 | 428.3 | 100 |

Santa Clara County is affiliated with the regional economy but displays a high degree of independence. Part of the County's attractiveness is attributable to its regional setting. The County is, in addition, closely integrated with, and dependent on national trends and market forces. Although the County economy is quite specialized in advanced technology industries, albeit serving diversified markets, the effect of this is not as significant during unfavorable economic periods as it is with a single-company community. The local economy is continuing to grow at a reduced rate and is in a maturing process where all sectors remain viable and the area becomes increasingly self-sufficient.

## San Jose Economic Status

San Jose is the central city in Santa Clara County and contains, with moderate variation, most of the county economic characteristics. Most economic data is not gathered at a city scale, so that it is not possible to define in great detail distinctions between the city and county economy. It is possible,

however, to elaborate on the status of San Jose in the context of its economic development evolution.

In previous years, a great deal of industrial development located in the North County and was preceded in a general southward development trend by residential development. This was caused by a relatively high ratio of employees to industrial acreage, and the style of residence desired. Thus, San Jose developed much of its residential land as single-family suburbs in response to employment opportunities outside its jurisdiction. This is not to say that San Jose was devoid of industrial development or that all new residents work elsewhere. However, a disproportionate share of residents, when compared to other central cities, must commute out of San Jose for employment. One result of this was a relatively low industrial tax base and an excessive residential service cost to the City, compared to other communities in the county.

It is presently expected that San Jose will be able to better compete for new industrial growth for a number of reasons:

1. Industrial sites to the north have been consumed so that San Jose is in the path of new industrial land absorption.

2. San Jose has preserved a wealth of developable sites which are relatively inexpensive to purchase.

3. San Jose is promoting industrial development through an aggressive program.

With increased industrial development and a steady or reduced residential development rate, San Jose's tax base should improve to a point where it is equitable with those of other developed cities in the county.

Many of the conditions which contributed to the previously unprecedented growth rate do not exist at the same magnitude today. This is seen in a Rand Study of policy implications in San Jose related to growth. Their conclusions were:

1. Santa Clara County's booming growth period in the previous decades is not likely to continue or reoccur in the future.

2. San Jose has become a large metropolitan area and is now more dependent on a more stable process of maintaining and replacing existing components of the economy rather than the more unstable emphasis on growth and construction to accommodate a rapidly expanding area and economy.

3. The local economy is therefore much less dependent upon high rates of growth (this is being reinforced by the current recessionary period).

4. Local policy decisions can neither restore a booming economy nor immediately reduce growth to zero. The impact of slower economic growth will not have a devastating implication on the local economy.

5. Since economic growth will continue to occur, albeit at a reduced pace, more attention can be given to planning and directing it rather than trying to maintain the high rate of growth.

6. The transition from a rapid to a more moderate growth rate will naturally displace a limited number of employees in that portion of the services sector that is growth-oriented. Thus a temporary increase in unemployment will result. The manufacturing sector and non-growth-oriented service sector will be largely unaffected by the slowdown.

Slower growth also means that structural changes in the local economy will occur more gradually, having less dramatic effects. While the local economy grew substantially, the growth-oriented industries (construction, real estate and finance) have been declining in overall economic importance. San Jose is attempting to attract more new industrial activity which is not necessarily inconsistent with reduced growth as long as the City captures only an increased proportion of economic growth expected in the county. If the ultimate effect were to induce a greater degree of growth in the county, this would be contrary to the current stable growth trend, and would be of questionable desirability.

Since growth in the service sector is directly caused by growth in the manufacturing sector, future expansion of the service sector can be expected to expand in proportion to manufacturing growth. In the past, many services were imported from elsewhere in the region. But with the advent of growing service needs, it became more advantageous to provide services at a local level. The San Jose Core Area was traditionally the major urban business center in the county, so it was natural for sub-regional service activities to locate here. This will continue to occur to the extent that the urban area warrants activities of this nature and scale.

Lastly, recent figures have shown that local worker productivity is somewhat greater than average worker productivity nationally. This indicates that the area economy is neither stagnant nor booming. Related to this, future improvements in both per capita and houshold income (which are high compared nationally) will depend on increased participation and advancement of the local labor force, rather than greater increase in worker productivity. For this to occur, the minority population must be involved more fully in the prosperity and affluence of the local labor force.

Labor and Occupational Resources

San Jose and Santa Clara County have a relatively young population distribution (somewhat younger than the state average). Recent trends have shown, however, that the percentage of population under 20 is gradually declining: 40% (1970) to 37% (1975), and is projected to approach 34% (1980). In contrast, the percentage of 20-to-34 year age group of young workers is increasing. The remaining major worker age group, 34-to-60, is remaining steady. The labor pool is one of the largest and most diversified in the Bay Region, as seen below:

Number of Employees by Industry and Regional Ranking

| 1970 Employed Residents | | Regional Ranking |
|---|---|---|
| Professional, Technical, Kindred | 94,000 | 1 |
| Management & Administration | 36,000 | 1 |
| Sales | 31,000 | 1 |
| Clerical & Kindred | 71,000 | 3 |
| Craftsmen & Foremen | 48,000 | 2 |
| Operatives (except transportation) | 40,000 | 1 |
| Transportation Equipment Operatives | 11,000 | 2 |
| Laborers (except farming) | 14,000 | 2 |
| TOTAL | 345,000 | |

Source: State of California, Office of Economic Development

The area's economic orientation toward advanced technology research and development activities, as well as manufacturing, has a labor force counterpart which is highly skilled and highly paid (compared nationally). This is the result of change in the local economy which saw low-skilled and low-paid agricultural workers replaced by a new labor force attracted by the area's growth and employment opportunities. Santa Clara County currently has the third highest median household income among metropolitan areas nationally. Although the number of workers has increased in the past for all major employment groups: blue collar, white collar, and service (excluding farm workers); white collar has grown proportionally more - from 53% of total employees in 1960 to 59% in 1970. Employment distribution by employment category is given below.

Occupational Distribution, Total Population 25 Years and Older in Santa Clara County

| | |
|---|---|
| White Collar | 59.1% |
| Blue Collar | 29.0% |
| Service Workers | 10.9% |
| Farm Workers | 1.0% |

Source: U. S. Census, 1970

The following table illustrates recent development of industrial sectors in terms of employee distribution and growth. The most significant employment growth occurred in non-durable manufacturing and services with sizable growth also occurring in government and trade sectors.

**Estimated Number of Wage and Salary Workers in Non-Agricultural Establishments, by Industry**
**San Jose Metropolitan Area 1966-1974**
**(amounts in thousands)**

| Industry | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 |
|---|---|---|---|---|---|---|---|---|---|
| Mineral Extractor | .2 | .1 | .1 | .1 | .1 | .1 | .1 | .1 | .1 |
| Construction | 16.5 | 15.6 | 17.5 | 19.1 | 17.6 | 18.5 | 19.3 | 18.2 | 19.9 |
| Manufacturing | 104.1 | 118.0 | 125.2 | 128.7 | 123.5 | 117.4 | 124.5 | 145.4 | 158.9 |
| Non-durable goods | 22.6 | 23.3 | 25.9 | 26.8 | 25.5 | 24.6 | 24.6 | 25.4 | 26.3 |
| Durable goods | 81.5 | 94.7 | 99.3 | 101.9 | 98.0 | 92.8 | 99.9 | 120.0 | 132.6 |
| Transportation/Utilities | 13.7 | 14.2 | 14.6 | 16.2 | 17.0 | 17.5 | 18.2 | 18.7 | 19.6 |
| Trade | 53.6 | 57.6 | 63.4 | 67.9 | 71.0 | 74.2 | 79.8 | 84.5 | 88.8 |
| Finance, Insurance and Real Estate | 10.0 | 10.4 | 11.3 | 12.3 | 13.1 | 14.0 | 15.8 | 17.1 | 17.9 |
| Services | 59.0 | 63.1 | 67.2 | 72.7 | 75.5 | 75.6 | 82.2 | 90.5 | 94.0 |
| Government | 47.7 | 50.6 | 53.5 | 56.7 | 60.0 | 61.6 | 65.1 | 67.3 | 71.0 |
| TOTAL | 304.8 | 329.6 | 352.8 | 373.7 | 377.8 | 378.9 | 405.0 | 441.8 | 469.6 |

Source: State of California, Employment Development Department

Because of the dominance of both electrical, machinery, and ordnance industries, the local occupational mix differs substantially from that of the region, state and nation. In general, skill levels necessary for local advanced technology industries are higher than that required in most other labor markets. Moreover, the composition of the local services industry, which provides nearly one-third of all jobs in the area, intensifies the need for white collar workers. Employment in this sector is principally involved in educational, medical and business services which require concentrations of professional and technical personnel. As a result, Santa Clara County has a substantially larger proportion of white collar workers than California as a whole. However, Santa Clara County also has an abundance of workers seeking semi-skilled and unskilled positions who do not meet the labor needs of most of the area's industrial sectors.

In the past, minorities have not enjoyed their proportion of benefits accruing from the area's growing prosperity. This problem will probably worsen, affirmative action programs notwithstanding, as the food processing industry and

construction continue to decline. Although minority educational attainment has improved, their job status and security has lagged far behind. This situation is alleviated to a certain extent with the extensive job training programs that are being promulgated by various agencies in the county. In the future, services, government and institutional, and retail trade sectors as well as continued skill-improvement programs will provide the best opportunities for unemployed and under-employed persons who are seeking upward mobility. As new employee inmigration begins to decline, minority employee resources will become an increasingly important labor resource to employers. It will be necessary to match new employment opportunities with local employee skills.

In a survey performed by the RAND Corporation, it was discovered that a great majority of in-migrants had secured jobs, or had imminent prospects of securing a job, prior to locating in the county. Almost 87% of new residents had employment within three months after locating here, and 64% had a job in one month. It can be concluded that migration has been generally in phase with economic development. This is partially the result of industries recruiting employees throughout the nation. As seen in the chart below, local unemployment has remained within reasonable limits which is indicative of a healthy employment environment. Employment prospects in the county have not resulted in an over-response to job opportunities, by in-migrants.

The following table demonstrates the rapid increase in labor force and unemployment relationships.

CIVILIAN LABOR FORCE EMPLOYMENT AND UNEMPLOYMENT IN SANTA CLARA COUNTY, 1950-1973 (000's)

| Annual Averages | Total Civilian Labor Force | Total Civilian Employment | Total Unemployment | Unemployment as a Percent of Civilian Labor Force |
|---|---|---|---|---|
| 1950 | 124.0 | 109.9 | 14.1 | 11.6 |
| 1955 | 153.7 | 144.6 | 9.1 | 6.1 |
| 1960 | 242.4 | 228.0 | 14.4 | 6.0 |
| 1965 | 336.7 | 316.5 | 20.2 | 6.0 |
| 1966 | 365.0 | 347.4 | 17.6 | 4.9 |
| 1967 | 390.6 | 372.9 | 17.7 | 4.5 |
| 1968 | 414.3 | 397.0 | 17.3 | 4.2 |
| 1969 | 426.0 | 411.0 | 15.0 | 3.5 |
| 1970 | 442.0 | 414.0 | 28.0 | 6.3 |
| 1971 | 461.0 | 427.0 | 34.0 | 7.4 |
| 1972 | 494.0 | 455.0 | 39.0 | 7.9 |
| 1973 | 536.0 | 505.0 | 31.0 | 5.8 |

Source: California Employment Development Department

## C. ECONOMIC DEVELOPMENT PROJECTIONS

Various public agencies and private businesses estimate the amount and nature of economic growth for San Jose and its metropolitan area, which coincides with the County area. Most projections are not done for a specific community but rather concentrate on larger economic units such as the County and region. The purpose of this section is to review and compare the various projections of economic growth for the County and the City. The objective is to attempt to arrive at a conclusion as to the level of economic growth which might be possible within the General Plan time frame.

Any projections of the future, and especially economic growth projections, must be qualified. It is always difficult to use a limited number of variables and knowledge of previous trends as a means of extending into the future to derive indices of the economic situation at a given point in time. Generally, the longer the project period is, the less reliable the projections become. For this reason, most projections examined in this report do not extend beyond 1980.

Neither short-range nor long-range projections provide certainty as to the future condition of the local economy. They are, rather, "educated guesses" as to the direction in which the local economy will develop, and an order of magnitude of the extent of growth. The projections are valid only if their underlying assumptions are valid. The projections are valuable tools in understanding how the economy could change in the future, and in determining what the general impact could be.

### Present Economic Recession:

San Jose and its metropolitan area is currently feeling the effects of the national recession and the increased level of unemployment and economic pessimism. The table on page 115shows the progression of local unemployment; of interest is the unemployment high of 7.9% during the recession in the early 1970's. The economy later recovered to a normal rate of unemployment prior to the current economic downswing. The comparable unemployment rate for March 1975 was a seasonally adjusted 8.4% in Santa Clara County, which is expected to continue rising to 9.0% in June 1975. Some economic advisors believe that recovery will gradually transpire such that unemployment will decline to 8.0% by June, 1976 and reestablish itself at a more normal level in the near future.

In the first half of 1974 the local economic atmosphere remained stable showing few signs of an impending recession. This was partly because products were being over-ordered as a reaction to concerns over resource shortages, and thus employment remained strong. However, the second half of 1974 saw the recession settle in some sectors. Electronics was hardest hit with 5,900 workers layed-off and non-electrical equipment and auto workers with 2,300 lay-offs. The non-durable manufacturing sector fared better as the food-processing industry was stabilized with good crop yields.

In most instances, impacts of the present recession were not incorporated into the projections considered in this report. For this reason, earlier projections for the period 1975-76 will not mirror existing data and recessionary projections. In addition, a lag effect may be felt in local economic growth which will not be reflected in projections for 1977 and beyond. The ultimate affect of the recession through the longer, 1990 period cannot be determined at this time.

The following table demonstrates the guarded growth outlook in employment that is expected for the County in the near future.

Nonagricultural Wage and Salary and Agricultural Employment
(Santa Clara County)

| Economic Sectors | June 1974 | June 1975 | June 1976 |
|---|---|---|---|
| Nonagricultural wage & salary workers[1] | 475,900 | 467,500 | 490,100 |
| Mineral extraction | 100 | 100 | 100 |
| Construction | 21,000 | 18,600 | 20,100 |
| Manufacturing | 161,500 | 147,500 | 155,200 |
| Durable goods | 136,500 | 122,900 | 130,200 |
| Nondurable goods | 25,000 | 24,600 | 25,000 |
| Transportation, communication and utilities | 19,400 | 19,300 | 19,700 |
| Trade | 89,200 | 90,600 | 94,600 |
| Finance, insurance and real estate | 18,000 | 18,400 | 19,100 |
| Services | 94,900 | 97,300 | 103,400 |
| Government | 71,900 | 75,700 | 77,900 |
| Agriculture | 5,600 | 5,400 | 5,500 |

1. Employment reported by place of work. Does not include persons involved in labor management trade disputes.

Source: Northern California Employment Data and Research.

Agricultural Outlook:

For multiple reasons, agricultural employment and economic activities are considered separately or excluded within economic projections. It is therefore necessary to devote a separate discussion to the status and the future of agriculture within the County. As has happened in many other locations, population growth, industrialization and urbanization have caused a decline of agricultural activities and farm employment in San Jose and its metropolitan area. Because of improved farming techniques, agricultural production has not diminished greatly in spite of the fact that agricultural acreage has declined significantly.

Various types of agriculture are declining in the County for a number of reasons including: old, poorly maintained orchards which yield small fruits, inability to mechanize adequately, small parcels, high property taxes and increased competition from newer farming areas. Additionally, the area's heritage as a highly productive agricultural center has diminished with the children of farmers often deciding not to work the family farm. Those agriculturalists who remain are divided, with some willingly pursuing their lifestyle while others are "marking time" until their land can be profitably sold for urbanization. Although some crops continue to be profitable, particularly specialty crops and some types of row crops, others cannot effectively compete in the agricultural market place. There are, however, innovative means to manage land more profitably, and government policy positions which would protect the County's agricultural economy. Santa Clara County has lost much of its economic advantage relative to other agricultural regions in the State and nation.

If erosionary trends continue, even at a slower pace than previously experienced, the agricultural sector of the economy will continue to decline and along with it the food processing industry. There may come a time when food processors may be forced to relocate out of the County. In this event, non-durable manufacturing will lose its relative importance in the County economy and many non-skilled and semi-skilled employees will be dislocated with only limited opportunities for reemployment.

Employment Projections

The following employment projections represent growth outlooks of both public agencies and private financial businesses. The Santa Clara County Planning Department assumes a standard ratio of 1.5 to 2.0 non-basic (service) workers per each basic (manufacturing) worker, and a standard ratio of 2.8 population per employee. These ratios have been used to compute total employment for each projection and the total population resulting from economic growth. The existing county relationship of workers to total population at 38% was used to calculate population growth from employment growth. Both relationships were derived from U.S. Census data. San Jose presently contains only 55% of the employment opportunities for its residential labor force while 45% must commute out of the City to work. Assuming a constant ratio in the future, as in the past, of county population growth to city population growth, 55% of new county jobs must be located in the city to maintain the status quo. Projections A-F represent relatively short-range projections while items G-I are for longer periods.

A. Bank of America forecasts (as of 1968) employment growth in manufacturing for Santa Clara County of 5,000 new jobs/year, through 1980. This represents total employment growth/year of between 12,500 and 15,000, based on the above-mentioned ratio. Total population increase would equal between 33,890 and 39,470 annually. If 55% of these new jobs located in San Jose, between 6,875 and 8,250 new job opportunities would be created in the City annually with a subsequent annual population increase of between 18,090 and 21,710.

B. The State Human Resources Development Agency forecasts (1971) annual employment growth in manufacturing in Santa Clara County of 4,500 jobs through 1977. This represents total employment growth levels of between 11,250 and 13,500 annually. Total population growth calculates at between 29,605 and 35,526 annually. This could potentially create between 6,187 and 7,425 new jobs annually in San Jose with an annual population increase of between 16,281 and 19,539.

C. Wells Fargo Bank predicts (1972) a constant annual increase of 2.9% of total employment in the county through 1980. This represents 14,000 new jobs/year, equalling between 5,600 and 4,666 manufacturing jobs. Total population increase/year would equal 36,842. San Jose's potential share of this growth of 55% would equal 7,700 new jobs annually and an annual population increase of 20,263.

D. PMI Mortgage Insurance Company, in a report on county economic conditions, predicts (1974) an annual increase of manufacturing jobs of 8,000 through 1979. Total employment increases are projected at 20,000 to 24,000 annually for the same period. Thus, total population increase would be 52,631 to 63,157 annually. New jobs in the city would be 11,000 to 13,200 with a subsequent annual population increase of 28,947 to 34,736.

E. The City of San Jose Office of Economic Development forecasts (1973) new manufacturing employment growth of 6,000 jobs annually in Santa Clara County through 1978. This represents between 15,000 and 18,000 total new jobs annually. Expected total population would be between 39,473 and 47,368 annually. Annual city growth would be: employment between 8250 and 9900 and population between 21,710 and 26,052.

F. The County Office of Education produced employment projections based on projected employment opportunities by occupational groups. Their projection (1970) is for total annual employment growth of 23,550 jobs through 1980. This is equivalent to between 7,850 and 9,420 manufacturing jobs. Total population increase would be 61,973. San Jose's share of annual employment growth could be 12,952 and an annual population increase of 34,084.

G. Phase One Summary Report, of the Santa Clara County Rapid Transit Development Project, produced projections for both population and employment growth. From a 1970 base of 423,700 jobs, it was projected that job growth would be 169,300 (1970-80), increasing 16,900 annually; and 100,000 (1980-90) with 10,000 annual increase. Annual manufacturing growth would be 5,643 to 6,772 (1980) and 3,333 to 4,000 (1990). County job levels would subsequently be 593,000 (1980) and 693,000 (1990). The population growth counterpart accord-

ing to the report authors are: 28,200 annual County growth (1970-80), and 22,100 (1980-90), San Jose's annual employment growth could be 9,311 (1970-80) and 5,500 (1980-90), with annual population growth of 24,502 (1970-80) and 14,473 (1980-90).

H. The Association of Bay Area Governments (ABAG) is a regional planning agency which provides projections as a product of their regional growth modelling effort. Their process began by taking national projections of employment growth shares for a 14 county economic region which was then interpolated to the nine county Bay Area region. Using certain modelling techniques, these projections were lowered to correspond with population growth parameters taken from State projections of county growth aggregated into regional totals. Regional employment growth is limited to a total employment level of between 2.7 and 3.2 million employed persons in year 2000, so as to conform to population growth limits. Three growth alternatives are detailed by redistributing regional totals of projected county employment growth. The three alternatives include:

Losouth 2 uses a low projection of regional employment growth and a low level of employment growth but with a high regional share of this growth continuing to occur in the South Bay.

Grosouth 2 assumes a relatively high level of population and employment growth and a continued regional development emphasis in the South Bay.

Gronorth 2 assumes the same high rates of growth as Grosouth but redistributes a greater share of growth emphasis, within the model to the North Bay.

The following two tables illustrate these employment projections by counties within the region and regional totals through year 2000. It can be seen that Grosouth projections allocate the greatest amount of growth to Santa Clara County.

COUNTY EMPLOYMENT GROWTH RATES BY GROWTH ALTERNATIVE BY DECADE
SAN FRANCISCO BAY REGION: 1970-2000
(Percent)

| COUNTIES[a] | 1970-1980 | | | 1980-1990 | | | 1990-2000 | | |
|---|---|---|---|---|---|---|---|---|---|
| | LOSOUTH 2 | GROSOUTH 2 | GRONORTH 2 | LOSOUTH 2 | GROSOUTH 2 | GRONORTH 2 | LOSOUTH 2 | GROSOUTH 2 | GRONORTH 2 |
| San Francisco | 0.4 | 6.9 | 4.0 | 2.0 | 5.6 | 1.9 | 2.7 | 10.7 | 4.7 |
| Marin | 7.3 | 14.6 | 29.1 | 11.9 | 14.3 | 31.0 | 10.6 | 18.1 | 37.6 |
| San Mateo | 8.5 | 16.1 | 13.0 | 12.8 | 15.4 | 9.9 | 14.2 | 20.0 | 12.6 |
| Sonoma | 15.6 | 25.0 | 59.4 | 18.9 | 22.5 | 59.8 | 21.6 | 31.6 | 74.9 |
| Napa | 7.4 | 14.8 | 22.2 | 10.3 | 12.9 | 21.2 | 6.3 | 20.0 | 32.5 |
| Solano | 3.5 | 12.3 | 35.1 | 6.8 | 9.4 | 28.5 | 4.7 | 12.9 | 29.3 |
| Contra Costa | 14.0 | 8.6 | 19.6 | 16.0 | 20.3 | 32.8 | 16.9 | 28.2 | 38.2 |
| Santa Clara | 16.9 | 23.8 | 17.8 | 16.2 | 18.8 | 12.8 | 16.5 | 23.1 | 15.1 |
| Alameda | 12.1 | 20.2 | 16.8 | 16.1 | 20.5 | 15.3 | 16.5 | 24.4 | 17.7 |
| Bay Region[b] | 9.6 | 17.2 | 17.2 | 12.1 | 15.6 | 15.6 | 12.9 | 20.7 | 20.7 |

COUNTY EMPLOYMENT BY GROWTH ALTERNATIVE BY DECADE
SAN FRANCISCO BAY REGION: 1970-2000
(Thousands of Employees)

| COUNTIES[a] | 1970 | 1980 | | | 1990 | | | 2000 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | LOSOUTH 2 | GROSOUTH 2 | GRONORTH 2 | LOSOUTH 2 | GROSOUTH 2 | GRONORTH 2 | LOSOUTH 2 | GROSOUTH 2 | GRONORTH 2 |
| San Francisco | 504 | 506 | 539 | 524 | 516 | 569 | 534 | 530 | 630 | 559 |
| Marin | 55 | 59 | 63 | 71 | 66 | 72 | 93 | 73 | 85 | 128 |
| San Mateo | 224 | 243 | 260 | 253 | 274 | 300 | 278 | 313 | 360 | 313 |
| Sonoma | 64 | 74 | 80 | 102 | 88 | 98 | 163 | 107 | 129 | 285 |
| Napa | 27 | 29 | 31 | 33 | 32 | 35 | 40 | 34 | 42 | 53 |
| Solano | 57 | 59 | 64 | 77 | 63 | 70 | 99 | 66 | 79 | 128 |
| Contra Costa | 143 | 163 | 177 | 195 | 189 | 213 | 259 | 221 | 273 | 358 |
| Santa Clara | 433 | 506 | 536 | 510 | 568 | 637 | 575 | 685 | 784 | 662 |
| Alameda | 470 | 527 | 565 | 549 | 612 | 681 | 633 | 713 | 847 | 745 |
| Bay Region[b] | 1,976 | 2,166 | 2,315 | 2,315 | 2,429 | 2,675 | 2,675 | 2,743 | 3,230 | 3,230 |

Source: Association of Bay Area Governments

The following table details the various growth projections for Santa Clara County. Corresponding population projections can be found in the population section of this report.

Santa Clara County Employment Projections-ABAG Growth Model

| Year/Alternative | Employed Residents | Total Employment | Basic Employment | Local Serving Employment |
|---|---|---|---|---|
| 1970 (Base year) | 464,943 | 432,772 | 220,540 | 212,232 |
| 1980: | | | | |
| Losouth | 527,504 | 505,637 | 246,439 | 259,198 |
| Gronorth | 545,709 | 510,181 | 252,480 | 257,701 |
| Grosouth | 566,394 | 535,769 | 263,212 | 272,557 |
| 1990: | | | | |
| Losouth | 605,213 | 588,101 | 281,119 | 306,982 |
| Gronorth | 619,122 | 575,304 | 283,579 | 291,725 |
| Grosouth | 665,150 | 638,890 | 309,613 | 327,277 |
| 2000: | | | | |
| Losouth | 690,882 | 685,232 | 317,799 | 367,434 |
| Gronorth | 722,263 | 661,747 | 325,712 | 336,035 |
| Grosouth | 814,438 | 784,204 | 373,888 | 410,316 |

The final table illustrates employment growth in terms of magnitude of new employed persons and percentage growth in Santa Clara County.

| Growth Alternative | 1970-1980 Total Employment | | 1970-1980 Basic Employment | | 1970-1990 Total Employment | | 1970-1990 Basic Employment | |
|---|---|---|---|---|---|---|---|---|
| | Actual Growth | % Growth | Actual Growth | % Growth | Actual Growth | % Growth | Actual Growth | % Growth |
| Losouth | 72,865 | 16.84 | 25,899 | 11.74 | 155,329 | 35.89 | 60,579 | 27.47 |
| Gronorth | 77,409 | 17.89 | 31,940 | 14.48 | 142,532 | 32.93 | 63,039 | 28.53 |
| Grosouth | 107,998 | 23.80 | 42,672 | 19.35 | 204,118 | 47.17 | 89,073 | 40.39 |

In addition to technology and development, Santa Clara County also has a large regional share of the fast growing expansion in business services, engineering, architecture, medical services, and higher educational institutions. Metal fabrication and machinery manufacturing also constitute a significant expansionary section, with more located in the San Jose area and in the industrial corridor on the northeast side of the county.

I. OBERS projections were produced (1972) by U.S. Departments of Commerce and Agriculture in response to a need for basic economic information by public agencies engaged in comprehensive planning of the nation's water resources. Projection topics include: population, personal income, employment and others from 1980 to 2020. Population projections are based on national population projection Series E which assumes achievement of zero population growth over a long time period.

The following tables illustrate OBERS projections for the Region and Santa Clara County.

Population, Employment and Personal Income, Historical and Projected, 1950-2020, San Francisco Bay Region

| | 1950 | 1962* | 1970 | 1980 | 1985 | 1990 | 2000 | 2020 |
|---|---|---|---|---|---|---|---|---|
| Population, midyear | 2,704,316 | 3,951,858 | 4,640,619 | 5,334,700 | 5,697,100 | 6,084,100 | 6,708,700 | 7,842,300 |
| Per capita income (1967 $) | 2,764 | 3,395 | 4,389 | 5,800 | 6,500 | 7,300 | 9,500 | 15,000 |
| Per capita income relative (U.S.=1.00) | 1.34 | 1.31 | 1.26 | 1.22 | 1.21 | 1.19 | 1.17 | 1.14 |
| Total employment | 1,081,710 | 1,434,915 | 1,899,018 | 2,375,500 | 2,539,100 | 2,714,000 | 3,085,800 | 3,536,500 |
| Employment/population ratio | | | .41 | .45 | .45 | .45 | .46 | .45 |

Population, Employment and Personal Income, Historical and Projected, 1950-2020, San Jose Metropolitan Area

| | 1950 | 1962* | 1970 | 1980 | 1985 | 1990 | 2000 | 2020 |
|---|---|---|---|---|---|---|---|---|
| Population, midyear | 293,038 | 770,033 | 1,071,796 | 1,385,900 | 1,529,500 | 1,688,000 | 1,954,000 | 2,429,200 |
| Per capita income (1967 $) | 2,251 | 3,061 | 3,880 | 5,100 | 5,800 | 6,600 | 8,700 | 13,900 |
| Per capita income relative (U.S. =1.00) | 1.09 | 1.18 | 1.12 | 1.08 | 1.08 | 1.08 | 1.07 | 1.06 |
| Total employment | 103,077 | 233,560 | 419,350 | 593,600 | 657,100 | 727,400 | 871,800 | 1,069,100 |
| Employment/population ratio | | | .39 | .43 | .43 | .43 | .45 | .44 |

* Employment is for 1960.

Source: OBERS Projections, U.S. Water Resources Council

## D. SAN JOSE ECONOMIC DEVELOPMENT PLANS AND NEEDS

### Economic Action Plan

San Jose has had an average annual industrial absorption rate of 70 net acres/year. Presently, 5,643 acres are in industrial uses or 9.4% of the total urbanized land in the city. There are 5,500 acres planned for industrial development in San Jose under existing development policy constraints.

The previous growth experience in the County has seen San Jose receive an inordinant amount of residential development and an inequitably low share of the industrial development. One problem that has resulted from this is San Jose's inability to finance necessary capital improvements because of an inadequate tax base relative to other communities in the County. In an effort to resolve the inequity, the City of San Jose Office of Economic Development (OED) has undertaken an aggressive economic development program including short-range economic goals and long-range economic planning.

It is believed that: (1) natural population increase - creating new members of the labor force over time, (2) in-migration as a proportion of State in-migration, (3) economic growth from its own momentum, and (4) industrial promotion will all add to the growth of the community. The economic development action plan is intended to channel this growth in a most beneficial direction. The intended effect of the action plan is to provide a better balance between the size of the labor force residing in San Jose, and the number of job opportunities located within the City. The intent is not to induce an unnatural population increase through increased unnatural in-migration rates, but rather to utilize existing projected employment growth to the fiscal advantage of the City and its residents.

The action plan is based on the following assumptions:

1. The economy of the nation, in spite of a temporary slowdown, will be strong. Foreign trade, moreover, will become a more important market for goods produced in Santa Clara County.

2. The industrial parks in Palo Alto, Mountain View, and Sunnyvale have only a limited range of parcels yet available, and most of these are at high prices. Morgan Hill and Gilroy will not effectively compete for manufacturing before 1978, at the earliest. Thus San Jose and Santa Clara will get most of the growth over the next five years.

3. San Jose will compete much more effectively than Santa Clara for this future growth. This reflects San Jose's five major advantages, as: (a) A strategic location in the Bay Area for future manufacturing; (b) A large, diversified and growing labor market with excellent accommodations for commuting to work within the City; (c) A large inventory of undeveloped land, with between 700 and 1,000 more acres to be brought onto market by the formation of assessment districts

for installation of additional off-site improvements; (d) Industrial land prices which are substantially below levels in northern Santa Clara County and surrounding counties; (e) An aggressive Economic Development Program featuring a broad marketing effort, rapid and effective development review process, and provision of appropriate off-site improvements at choice locations.

Land and Labor Needs

San Jose is promoting industrial development to the extent of an average of 155 net acres/year of industrial development in a five-year program (1973-78). This represents 50% of the projected employment growth in the county and is more than double the current 70 acre industrial absorption rate. To facilitate this, the City is cooperating in the formation of industrial parks, based on the assumption that 70% of future industrial land absorption will occur in industrial parks, reflecting the current trend. The Core Area is also being promoted as a sub-regional service and governmental center.

Implicit in the balanced community formula is an accelerated industrial growth rate and a residential growth rate that is held constant. In this manner, San Jose's relative tax base should improve, but a greater number of employees must necessarily reside in communities other than San Jose. Economic and market analyses indicate that the manufacturing sector would be the most suitable within which to create new jobs, with trade, services and governmental and institutional also having a high potential for job expansion. New manufacturing firms will create increased demand for business services while additional high levels of household income should also lead to more demand for personal services.

While development of advanced technology manufacturing would directly address the tax base imbalance, the problem of unemployment and upward viability of the disadvantaged must be dealt with secondarily through the subsequent expansion of the government, retail trade, and services sector. Within this context, equitable employment opportunities of the disadvantaged is only addressed directly through public affirmative action programs. The government and institutional sector is, however, most adept at addressing problems of job stability, disadvantage wage levels, and minority employment opportunities.

The City is promoting industrial development of businesses with high ratios of employees to land in an attempt to utilize the remaining land to the fullest. The objective is to attract economically and socially beneficial industries while protecting the remaining industrial reserve land from infringement of less desirable and less efficient land uses. The reserve areas, however, are in need of other basic services and subdivision into more attractive industrial park sites. As part of the City's effort, financial support is being given to provide the necessary services and capital improvements.

Beyond the five year program, an abundance of undeveloped industrial acreage will remain. As programmed, industrial development will consume 155 net acres annually (180 gross acres) for a five year gross developed total of 900 acres. Thus, 4600 acres of industrial acreage, or 25 years worth, will remain. OED feels that an over-abundance of industrial land is presently required so as to provide a broad selection of site sizes and characteristics with which to match

the needs of industrial developers. With the termination of the aggressive development program, it will be necessary to continue developing industrially so as to maintain the newly achieved balance relative to other communities in the county. Of greater significance is the fact that the reservoir of developable residential land as presently defined in the City's Urban Development Policy will be consumed much before the industrial reservoir is consumed. The mitigation of this situation has not been resolved at this time.

The local, varied and highly skilled labor force should also be a major attraction to potential business firms. Given existing population trends, it is conceivable that the short and long run supply of labor may be sufficient (as it has in the past) to supply future employers. Increased industrial development would perhaps accelerate the rate of in-migration which could, in turn, have an effect on the absorption rates of other land uses. If the City were to respond to the inevitable increase in residential development pressure, the objective of an increased tax base would be jeopardized and the reservoir of developable residential land would be depleted prematurely.

## E. RELATIONSHIP BETWEEN ECONOMIC AND POPULATION GROWTH

### Analysis of Projections for Santa Clara County

Most projections of population growth consider only population characteristics without regard for future economic growth. In a few instances, notably ABAG and RTDP, comprehensive projections of population and economic growth are done which are consistent with each other. Similarly, most economic growth projections are done without considering population growth trends. In virtually no projections of population and economic growth are other factors of growth such as availability of land, explicitly incorporated into projections. While the ultimate general plan objective is to determine desirable growth and development rates, the immediate concern is to consider the compatibility of independent projections of population with the level of population which would result from projected levels of economic growth.

Because of the relative uncertainty of the economic future, most projections are only done for a short time period. Since economic trends seem to vary somewhat from year to year, and the interpretation of the significance of these variations is highly judgmental, there is a wide disparity of growth outlooks to 1980. This is evidenced by the variation in projected average annual increase in manufacturing jobs in the County to 1980 from 4,666 to 9,420. Projected total annual employment for the County to 1980 ranges from 12,500 to 23,500.

There seems to be no definable trend in projections done at different points in time. Projections of annual growth by date of projection are: 1968=12,500 to 15,000; 1970=23,550, 1971=11,250 to 13,500; 1972=14,000; 1973=15,000 to 18,000; and 1974=20,000 to 24,000. While it is interesting to note that projections done in 1973 and 1974 are relatively optimistic, it should be added

that both projections originated from the same analyst. It should also be reiterated that the short and long-range effects of the current recession are not fully considered in these projections.

Further complicating analysis among projections are the different projection periods, that is, projections are done through 1977, 1978, 1979 and 1980. If statistical liberties are taken such that all projections extend through 1980, their subsequent population growth impacts can be compared. Thus for Santa Clara County in 1980 employment growth could be between 11,250 to 24,000 annually while population levels could be between 1,361,000 and 1,697,000. When this range is compared with population projections for 1980, it can be seen that most projections of economic growth in the County would cause population growth in excess of all population projections except those which are considered unreasonably high. As seen another way, the range of annual population increases from 1970 to 1980 for the highest projections of ABAG, DOF and Santa Clara County, is between 24,300 and 36,600. When this is compared with annual population growth resulting from economic growth projections (a range of 29,605 to 63,157) the disparity among growth outlooks becomes more apparent.

The longer range projections include both economic and population counterparts. Both RTDP and ABAG's most plausible Santa Clara County projection (Grosouth) represent coordinated economic and population projections. OBERS provides coordinated projections although both economic and population growth outlooks are greater than ABAG and RTDP with population exceeding most other County growth projections.

In summary, independent projections of population growth and economic growth generally show a wide disparity in in-migration rates. Where population projections assume a constant or decreasing in-migration rate, economic projections typically require a greater or increasing in-migration rate to satisfy labor needs. An unlikely alternative would be for the additional labor force to live in other counties. The County's regional transportation linkages do not, however, tend to support this alternative. It will be necessary at a later date in the general plan revision process to establish a desirable rate of population growth, and a consistent rate of economic growth.

Analysis of Projections for San Jose Sphere of Influence

Analysis of San Jose Sphere of Influence growth can be achieved by converting County economic growth projections, and subsequent population growth to Sphere of Influence growth and then comparing these with population growth projected specifically for the Sphere. From this, it appears that many of the short-range economic projections would require population growth in excess of that considered reasonable, as discussed in the Population section of the report. The more optimistic economic projections exceed the high end of the range of sphere of influence population projections. The few conservative economic projections are smaller than the "reasonable" projected population level. It is interesting to note that the State Human Resources Development Agency's projection, which is the smallest economic growth outlook presented, would come closest to matching "reasonable" population growth in 1990.

Longer range projections produce employment and growth projections which are coordinated, but these may not represent the general plan population objective. Specifically, RTDP employment projections require population levels which are higher than forecast in the population section. The long-range economic projections provide mutually compatible employment and population projections, but they forecast a level of growth which substantially exceeds that envisioned in the population projections (such as the City's cohort-survival model) which are considered most reasonable. The ABAG Grosouth projections are the only joint economic-population projections which envision a level of growth for 1990 consistent with the City's Medium-F cohort projections. The extent to which the various economic projections differ from Grosouth is an indirect measure of the variance in projected population levels. The OBERS projections are higher than all other long range projections and represent national economic growth distributed to local areas without regard to local land or population constraints.

No final conclusions have been drawn as to the most likely level of future economic activity for the County or for the City's sphere of influence. The projections vary widely and so it is very difficult to make a judgment as to the most likely growth to occur. The projections do indicate within a broad range what might be possible in terms of economic growth but the real issue for the General Plan is that of the desired level of growth. The difficulty in resolving that issue is highlighted by the general lack of compatibility between economic projections and population projections.

## F. CONCLUSIONS

1. The City may run out of residential land within the Urban Service Area long before the supply of industrial land is exhausted.

2. Projections of annual employment growth for the County vary widely but tend to cluster in the 11,000-15,000 range and the 20,000-24,000 range for projections to 1980, and cluster in the 10,000-13,000 range for projections to 1990.

3. Projections of annual employment growth within the City's sphere of influence display the same degree of variation and tend to cluster in the 6,000-8,000 range and the 11,000-13,000 range for projections to 1980 and in the 5,000-7,000 range for projections to 1990.

4. The projections of population described in the Population section of this report do not appear to be compatible with the population growth which would accompany the projected levels of employment growth.

5. Because of the wide disparity among economic projections, and the apparent incompatibility of projections of employment and population growth, no conclusion has been drawn as to the reasonably possible level of future employment growth.

Holding Capacity For Growth

# VIII. HOLDING CAPACITY FOR GROWTH

## A. INTRODUCTION

It was indicated in the preceding section of this report that the City must make some judgment as to future population growth in order to anticipate the land use and public improvement requirements of future growth. The view of population growth presented in that section was based upon specific assumptions as to migration and natural increase. It was further stated that the level of growth projected is not inevitable. Population growth occurs because decisions are made: by organizations and institutions; by individuals; and by public bodies. Those "public" decisions which most directly influence growth in San Jose are guided by the City's General Plan and its Zoning Ordinance. Thus official documents provide another view of population growth.

When the 1966 General Plan (specifically, the Land Use Element) was prepared, there was no conscious intent to plan to accommodate, or serve, any given level of population. Rather, it was simply assumed that all land within the City's sphere of influence would eventually develop and should therefore be designated for some specific use. Because the Plan specifies allowable ranges of housing density for residentially-planned land (such as 5 to 8 dwelling units per acre) development according to the Plan would result in a given level of population. The General Plan population - or "holding capacity" - has been calculated. The result is actually a range of population, due to the fact that the Plan allows for residential development to occur within a range, rather than at a specific density. The General Plan holding capacity has also been calculated for different geographic areas, as described below.

The City's legal stance toward growth is contained in the City's Zoning Ordinance which specifies the uses to which land can be legally put. (The General Plan does not in all respects have the force of law). As with the General Plan, the population level which would result from development in the manner in which the City is zoned is entirely incidental. It is significant, however, because it is legally possible.

In subsequent phases of the GP '75 work program, we will be considering the impact of different levels of population growth on such things as land use, air quality, water supplies, jobs, taxes, and the cost and availability of public improvements. We will also consider the alternatives for spatially distributing given levels of population. The real problem for the General Plan is not that of predicting population growth, but of evaluating the effect of growth and developing the methods for achieving the population level that is desired.

## B. GP HOLDING CAPACITY FOR SPHERE OF INFLUENCE

In calculating holding capacity, it has been necessary to assume a given point

in time at which the area will be fully developed. The time frame of the G.P. for projection purposes is considered to be 1975-1990. Household sizes have been declining and are expected to continue to decline through 1990, consistent with the assumptions of the City's cohort-survival projections. The G.P. holding capacity is thus less than it would be if based on current household sizes. The holding capacity calculations do not take into account the practical constraints on development caused by existing lot lines or construction already in place. Since the amount of existing development at densities less than that designated in the General Plan appears to be generally matched by the amount of existing development at densities greater than designated by the General Plan, this is not a significant factor.

General Plan Minimum

The holding capacity of the General Plan for the entire sphere of influence is an extremely broad range of 593,000 to 1,116,000 population. The minimum population figure of 593,000 is derived from calculating the number of dwelling units which would result from development at the low end of the density range for each G.P. residential land use designation. This figure is not a reasonable measure of holding capacity and is included only for comparison purposes. We know from past history that very few residential developments are built at a density reflective of the low end of the designated range. This figure is in fact lower than the present population within the City's sphere of influence.

General Plan Maximum

The maximum population which could occur under the General Plan if full development occurred by 1990 is 1,116,000. This figure is derived by calculating the number of dwelling units which would result from all development occurring at the high end of the designated density ranges. That this figure would represent substantial growth is evidenced by the fact that it is double the City's current population.

General Plan "Reasonable"

While the maximum holding capacity is a more meaningful figure than the minimum holding capacity, it is still a highly theoretical number. In reality, development does not typically occur at either extreme for most density ranges. Under the City's present zoning ordinance it is not legally possible to develop at the upper end of the highest General Plan density range of 42 to 62 dwelling units per acre except under Planned Development provisions. It is not likely that development would typically occur in this fashion. To arrive at a measure of holding capacity which would be more relevant for comparison purposes, the holding capacity was calculated based on the average density for each residential land use category or the maximum density possible under present zoning (i.e., 42 du/ac for the highest density category). The resulting figure was 824,000 population.

Lands Suitable for Development

Since the latest amendment of the Land Use Element of the General Plan, several

General Plan elements have been adopted which contain policies directed toward regulating development in "hazardous" areas and preserving natural resources. These policies are not reflected in the General Plan land use designations and consequently do not now influence the General Plan holding capacity. As an initial step in assessing the inherent suitability for development of land within the City's sphere of influence, we have subtracted from the above-described "reasonable" holding capacity, the population which might otherwise occur from development of areas subject to a high degree of risk from several factors. This reduces the holding capacity to 738,000 people, a reduction of 86,000. Those areas considered to be unsuitable for development were lands within the Airport Safety Zones, areas of landslide susceptibility, areas with soil prone to downhill creep, areas with soils prone to liquefaction, areas subject to (seismic) surface rupture, and areas subject to flooding of one foot deep and over by the 100 year flood, as identified by the U.S. Army Corps of Engineers. It is to be stressed that this initial identification of areas which are unsuitable for development in accordance with existing General Plan policies, is an incomplete one. A more comprehensive analysis is in progress which considers additional safety factors, as well as the need to preserve important natural resources.

## C. G.P. HOLDING CAPACITY FOR VALLEY FLOOR

The present General Plan allows residential development within hillside areas, although at relatively low densities. In light of the information developed in preparation of the Seismic and Safety Elements of the G.P., the appropriateness of any significant amount of urbanization in the hillsides is open to question. The amount of population which could be accommodated at present General Plan densities within the valley floor, generally below the 15% slope line, was therefore felt to be of interest. The General Plan "reasonable maximum" (as described above) was calculated for this area, which coincides with the City's Urban Service Area and Urban Reserve. The population holding capacity was found to be 786,000 as compared to 824,000 for the entire sphere of influence. It should be remembered that no residential land use is designated for the valley floor within Coyote, or for Alviso.

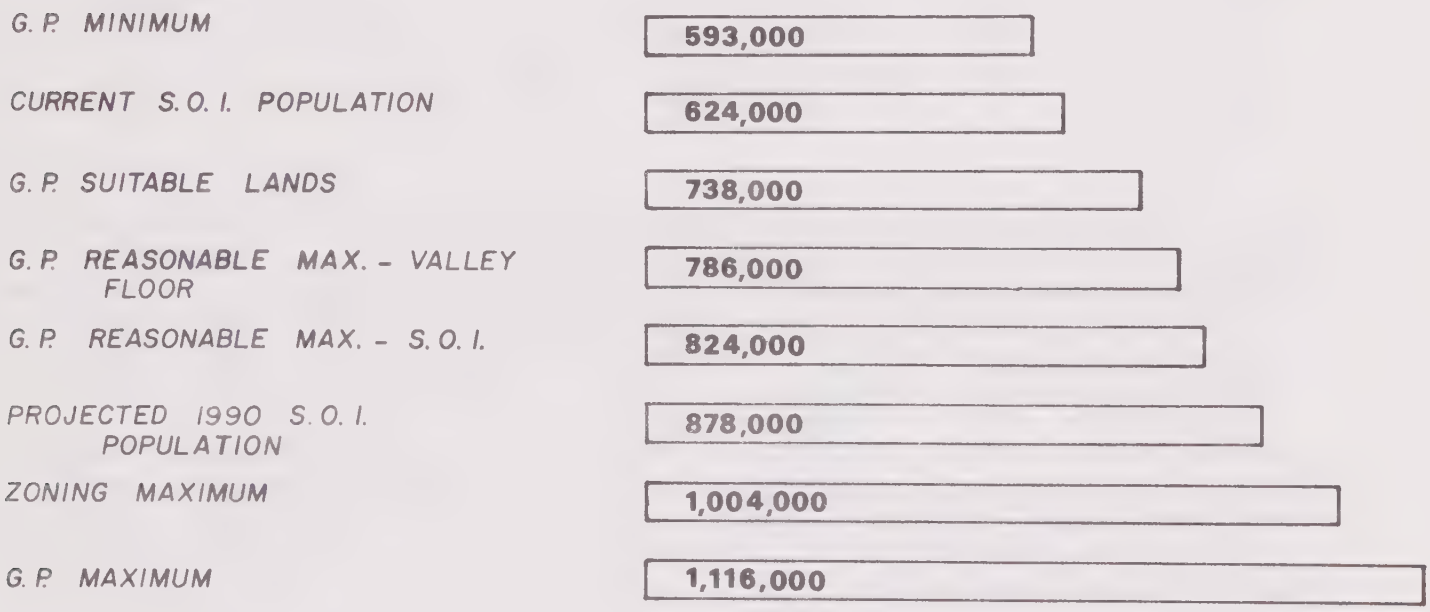
## D. HOLDING CAPACITY OF LAND AS ZONED

The zoning ordinance, in addition to specifying the uses to which land can legally be put, specifies the minimum lot sizes for the various residential zoning districts. From this, the maximum number of dwelling units legally possible in any given residential zone can be calculated. The analysis included all residentially zoned land within the City's sphere of influence, whether zoned by the City or the County. Agriculturally zoned land was not

included. There is a high probability that much of this land could ultimately be developed for residential purposes, but it is impossible to estimate the amount. The current City and County residential zoning within San Jose's sphere of influence would permit a maximum population of 1,004,000. As with General Plan holding capacity, the practical constraints on development caused by existing lot lines or construction already in place were not taken into account. .

## E. COMPARISON OF HOLDING CAPACITIES

The chart below provides a comparison between the various measures of population holding capacity, and constrasts them with the projected sphere of influence (S.O.I.) population for 1990.




As can be seen from the chart, the G.P. minimum holding capacity has already been surpassed by current population and is not a relevant figure. At the other extreme, the maximum holding capacity of the General Plan and the Zoning holding capacity would allow for considerably more population than is projected for 1990. In fact, although it is not indicated on the chart, they exceed the population projected for the year 2000.The appropriateness of planning and zoning for far more population than is likely to occur is questionable. It is also worth noting that we have zoned for far more population than can reasonably be expected from development according to the General Plan, especially if all land designated for residential use is assumed to be "suitable." A final observation is provided by a comparison of the 1990 projected population and

the "reasonable" holding capacity of the G.P., for lands suitable for development. This indicates that the projected level of population could not be accommodated at densities typical of development in San Jose, unless safety considerations were ignored.

# Housing

# IX. HOUSING

The housing goals and policies section is essentially a review of all existing goals and policies as adopted or recommended for adoption by four levels of government: the State of California, the regional Association of Bay Area Governments, the County, and the City. These goals and policies have been presented in six different reports: 1) The Statewide Housing Element-Phase III (not yet adopted), 2) the ABAG Regional Housing Plan (not yet adopted), 3) the Santa Clara County Housing Element (adopted October, 1973), 4) the Joint Cities-County Housing Element (adopted May, 1971), 5) the City Housing Element (adopted May, 1974) and 6) the City Housing Assistance Plan (adopted February, 1975).

A total of nineteen goals and four objectives have been distilled into seven goals which are presented here in general order of their prevalence and emphasis among the four levels of government and their impact upon the General Plan '75 revision. A total of 153 policy and program recommendations and other assorted requests for action was reviewed and several are presented here either as examples or as specific recommendations which have particular relevance to GP '75. Most have been summarized, but in the first section a recommended Statewide Housing Element program is presented in its entirety.

## A. Expansion of the supply of low- and moderate-income housing.

State Policy Recommendations: None

State Program Recommendations: Eighteen directly or indirectly related to the General Plan. An example: The State should provide support for local community development activities by enacting legislation providing for State insurance of redevelopment agency bonds. Terms would include payment by the redevelopment agency of a percentage of the amount of the bond to a state insurance fund. In addition, redevelopment agency project would be evaluated as to their fiscal soundness relative to risk to the insurance fund.

Regional (ABAG) Goal restatement: "Growth management efforts of regional and local bodies should be directed toward the expansion and conservation of housing for low- and moderate-income people".

Regional Policy Recommendations: None

Regional Program Recommendations:

> Two examples: 1) Local plans, development proposals, and growth control measures being reviewed by ABAG must contain provisions that are specifically designed to expand and conserve the supply of low- and moderate-income housing; and 2) Local development proposals and growth control measures, in order to be found consistent with regional policies and objectives and to receive favorable review by ABAG, must be in accordance with adopted local and regional housing elements.

County Policy Recommendations:

1. Housing construction for future populations and for replacement needs should be stimulated, consistent with community growth goals.

2. The ability of persons and families to meet their housing needs in the housing market should be increased.

3. The provision of safe, sanitary, standard housing to accomodate persons and families disadvantaged in the housing market should be facilitated.

4. The operation of the housing market should be facilitated so that suppliers and consumers can function more effectively.

5. The expansion of the supply of low- and moderate-income housing shall be encouraged by the County.

6. Efforts to achieve a more balanced supply of housing, in order to expand the choice of residential location for low- and moderate-income households, should be encouraged.

County Program Recommendations and requests for action: twenty-one directly or indirectly related. An example: A non-profit Housing Development Corporation and Revolving Loan fund shall be established for the purpose of developing low- and moderate-income housing throughout the County.

City Policy Recommendations: Five directly or indirectly related.

Three examples:

1. To the extent...possible, conserve the existing housing stock...to insure that the low-priced housing stock is not decreased below the need therefore... (Housing Element)

2. A centralized housing service center should be established to assist individuals and families in the solution of housing problems, such as... overcoming financial obstacles to buying, renting, or repairing suitable housing units. (HAP)

3. To the extent legally possible, employ constituted powers to acquire sites for low- or moderate-income housing.

In addition, all recommended policies and programs relating to housing conservation, rehabilitation, public housing, land acquisition, and relocation recognize and make reference to the need for low- and moderate-income housing.

B. Discrimination on the basis of race, ethnic origin, sex, age, marital status, or household composition should be eliminated. Concurrently, economic "mix" should be encouraged.

State: No significant policy or program recommendations.

Regional Policy Recommendations: (Two examples)

1. Local general plans should contain a realistic assessment of the extent of discrimination operating in the housing market and must specify the means to be employed by local government to eliminate such discrimination.

2. A regional housing allocation system should be adopted by ABAG and by member counties and cities, which would establish "fair shares" of the region's needed low- and moderate-income housing...

Regional Program recommendations: Twenty directly or indirectly related.

An example: ABAG will urge the federal department of HUD to incorporate the adopted Regional Housing Allocation Plan into its procedures for disbursing housing subsidies to localities in this region.

County Policy Recommendations:

1. The use of zoning in ways which exclude persons on the basis of racial, economic, ethnic or age characteristics is unacceptable in the cities and unincorporated areas of Santa Clara County.

2. Zoning is to be used in ways which will encourage variety and mix in housing types and provide adequate sites for housing persons of all income levels in each jurisdiction and generally in proportion to the array of income levels provided by employment opportunities in each jurisdiction. (Comment on this policy: The limitation of this proposal to single jurisdictions overlooks the fact that there are at most only a few "housing markets" within the County and that these markets generally cross jurisdictional boundaries).

3. The County should continue its efforts to eliminate discrimination in the sale and rental of housing.

Program recommendations: Twelve "concepts" were either endorsed in principle or given support and encouragement. An example: The neighborhood school should be re-examined in terms of its influence in reinforcing or sustaining segregated patterns.

City Policy recommendations: Five policy recommendations - 3 examples:

1. The City shall take all physically and legally available steps in order to encourage economic mix or income heterogeneity in individual housing developments and thus promote mix in the cost of housing units in new subdivisions, apartment complexes and planned developments (Housing Element)

2. Housing Allocation Systems (Housing Element and Housing Assistance Plan, Block Grant application)

3. Criteria used in decisions relating to development proposals. Include: Cost of proposed housing, supply of housing at other locations, school availability and balance (Housing Element)

C. The existing housing stock represents an invaluable resource and should be conserved wherever possible.

State Policy recommendation: Cities and counties should undertake efforts to conserve the existing housing stock.

State Program recommendations: Eleven with either direct or indirect relationships. Most are related to code enforcement.

Regional Policy recommendations: None

County Policy Recommendations: The County encourages the maintenance and where necessary, the rehabilitation of the existing housing stock of the County.

City: All policies and program recommendations relating to housing rehabilitation and conservation are pertinent to this goal. In particular, Policy 11 of the Housing Element states that, to the extent legally and fiscally possible, the existing stock should be conserved through a balanced program of housing code enforcement and complementary programs...

D. Blight should be eliminated and neighborhood desirability, stability, and identity should be promoted.

State and Regional: No specific references

County: No specific references.

City (Goal re-worded): Neighborhoods, if deteriorating, should be improved... and if being developed or re-developed, should incorporate good design, foster aesthetics, and promote usable open space.

Policy and program recommendations:

All policy and program recommendations involving code enforcement, and housing rehabilitation and conservation are oriented to this goal. An example: A Housing rehabilitation program designed to eliminate existing residential blight... by (among other things) establishing a neighborhood with a proper residential environment and a cohesive identity (HAP Policy recommendation No. 1)

E. Adequate and accessible public facilities should be (provided) to residential areas.

State and Regional Levels: no reference

County: (From the County Housing Element)

Policy recommendations:

1. Existing and future urban development should be in cities

2. Urban expansion would be planned and programmed by cities on a staged basis, in cooperation with the County, and urban service area boundaries should be approved by LAFCO.

3. The County shall limit residential development outside urban service areas to development that does not require the extension of urban services or facilities.

F. Inter-jurisdictional cooperation should be promoted, expanded, expedited, and, in some cases, required in matters affecting the housing market.

State Policy recommendation: Cities and counties should make use of the Area Housing Council concept. This provision authorizes any two or more cities or counties to enter into agreements forming an area housing council.

Policy recommendation: State legislation should be enacted requiring cities and counties...to forward copies of proposed redevelopment plans and associated reports to adjoining jurisdictions, the county, and...the regional association of governments for their review and comment.

Regional: No specific reference in "Regional Housing Plan". However, the "fair share" allocation system depends on inter-jurisdictional cooperation for its implementation.

County request for action: The County encourages the Planning Policy Committee... to continue its work to establish a county-wide program for the location of future subsidized housing throughout the County. (County Housing Element)

City Housing Goal 11 (Restatement): San Jose should work in close cooperation with other entities, public and private, to foster information, techniques, and policies to achieve the housing goals set forth (in the adopted Housing Element).

City Policy recommendation: City staff and local school district staffs should jointly work out acceptable implementation standards covering criteria related to available school capacity.

G. The Homeownership rate should be increased.

State Policy Recommendations:

Conversion of existing rental multi-unit properties to cooperatives or condominium ownership should be promoted and facilitated

Regional, County, and City:

No references, either explicit or implicit, to this goal.